

EXHIBIT 2

General Electric Co.

FCF and Fundamental Risks Do Not Support Premium – Moving to a UW Rating and \$27 Price Target from NR.

While recognizing a bold portfolio transformation, and solid technology potential, we think these positives are more than reflected in GE stock at current levels, and on the numbers, we see an unfavorable risk/reward, given a stubbornly high expectation forward earnings curve, and weak underlying earnings quality/FCF, at a premium valuation. More specifically, we think the \$2 '18 EPS target will remain elusive on mixed fundamentals that have already materially lowered the '16 base and requires two years of 10% profit growth after 1% growth in '15/'16 despite recent order declines of 5-10%. Just as important, the \$2 on its own is less meaningful in the context of FCF, the ultimate sector arbiter, which, with structurally lower core conversion which is stock specific, using a definition more consistent with peers, comes to \$1.35/share in '18. Our PT of \$27 assumes a sector type P/E multiple, but a still rich 20x FCF, a 40% premium to the sector, and 20% premium to DHR and ROP, and an implied 3.4% dividend yield, reasonable for a company that next year will likely be negative available cash post dividend next year. Aside from the numbers, as for the narrative on the stock, with the recent multiple expansion, there is the potential that high expectations and a long cycle portfolio limit leverage to the short cycle macro trade now in vogue, while those same high expectations, and ongoing weakness in FCF makes others look more safe. We resume coverage at Underweight

- **GE has underperformed this year after significant outperformance last year.** GE has underperformed the group by ~1500bps so far YTD and this comes after ~3,000bps of outperformance last year. Prior to this, over the last decade, GE has underperformed the group by an average ~1,000bps each year for a cumulative underperformance of 16,500bps from 2004-2014 and underperformance of ~5,000bps from 2009-2014.
- **First, the positives...**Not news, and well vetted by peers, GE management has made bold moves in the past year, a positive rate of change internally, the technology play is solid off of a strong installed base, including a nascent Digital initiative, and a de-SIFI'd GE is a cleaner story. Backlog is also positive and a steady flow of buyback is a technical support to the stock. We agree with these attributes.

General Electric Co. (GE;GE US)

FYE Dec	2014A	2015A	2016E	2017E	2018E
EPS - Recurring (\$)					
Q1 (Mar)	0.33	0.20	0.21A	-	-
Q2 (Jun)	0.39	0.31	0.46	-	-
Q3 (Sep)	0.38	0.29	-	-	-
Q4 (Dec)	0.56	0.52	-	-	-
FY	1.65	1.31	1.48	1.65	1.85
Bloomberg EPS FY (\$)	1.65	1.29	1.50	1.76	2.03

Source: Company data, Bloomberg, J.P. Morgan estimates.

Underweight

Previous: Not Rated

GE, GE US

Price: \$30.34

Price Target: \$27.00

Electrical Equipment & Multi-Industry

C. Stephen Tusa, Jr CFA ^{AC}

(1-212) 622-6623

stephen.tusa@jpmorgan.com

Bloomberg JPMA TUSA <GO>

Rajat Gupta

(1-212) 622-6382

rajat.gupta@jpmorgan.com

Patrick M. Baumann, CFA

(1-212) 622-0160

patrick.m.baumann@jpmorgan.com

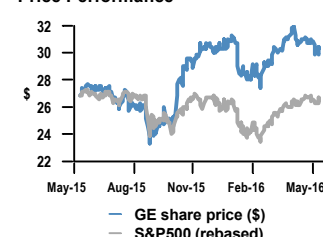
Daniel J Innamorato

(1-212) 622-9884

daniel.j.innamorato@jpmorgan.com

J.P. Morgan Securities LLC

Price Performance



Company Data

Price (\$)	30.34
Date Of Price	11 May 16
52-week Range (\$)	32.05-19.37
Market Cap (\$ mn)	277,829.20
Fiscal Year End	Dec
Shares O/S (mn)	9,157
Price Target (\$)	27.00
Price Target End Date	31-Dec-16

See page 232 for analyst certification and important disclosures.

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- **...outweighed, in our view, by the negatives including an aggressive forward earnings curve...**With a lower '15, and what is clearly an increasingly lower profit base coming into view for '16, \$2 looks more like a stretch, with a hockey stick needed in Industrial Profits into a '17/'18 that now needs to grow an average 10%+ (we are at 5%). Positives are Aero and Renewables top line, and better Healthcare profits, but Oil/Gas, Transportation and Connected Energy are all drags, with key TBDs Aero margins, Power Services growth (sustainability of AGPs) and the HDGT cycle. We are initiating a below consensus \$1.85 for '18, with profit of \$18 B for '16 versus standing guidance of \$19 B+ and our estimate of \$19.5 B prior to restriction, showing the base of the curve has seen material downside already. While some may say growth is too low here, in the context of two years of ~1% growth and recent total order declines ranging from 5-22% in the last three quarters, and expected 10% to come in 2Q, we think our view is more balanced.
- **...and structurally low FCF, a stock specific dynamic...**Current conversion (on total EPS) of 75% is low, driven by zero ongoing cash return from GECS Verticals (\$0.17), and despite ~\$500 mm in net benefits from factoring to GECS, cumulative receivables for which total \$13 B against the \$90 B of ongoing ENI, a material amount and higher than peers, almost none of which factor regularly. While the core GE defined conversion can improve as management anticipates, with cash poor ALO accretion (we estimate 50% by '18 or ~\$0.08 of cash), structural business model dynamics like a stretched supply chain, competitive terms (aero-derivatives are book and ship, H-Frame lead times <12 months), and program accounting related adjustments in earnings (+\$1.4 B in '15), all stock specific issues, we don't see a material enough change in the core to make that big of a difference. Coming years will also have to contend with pension contributions of \$2-3 B (see below on GECS hangover) offsetting potential benefits elsewhere. All in, when compared to consensus of \$2, we peg FCF/share at ~\$1.35, or \$11.3 B. Putting our '17/'18 FCF estimates up against the dividend shows average available FCF after dividends of ~\$1.2 B/yr.
- **...balance sheet optionality average.** While management has discussed \$20 B of balance sheet optionality, with a lingering pension overhang from GECS that adds ~\$7 B to ratings agency calcs (now ~\$27 B), the guarantee on GECS debt, and negative available FCF, we think this is the max near term, without breaking the shareholder covenant around \$35 B in buyback. Either way, 7% of the market cap over the next three years is not differentiated versus the group and others. If it were deployed, it would add \$0.10 to our number, contemplated in the upside part of our risk reward.

- **A premium price tag, unfavorable relative risk/reward.** We understand the excitement around transformation, but despite some cooling, and 1,000 bps of YTD de-rating, valuation remains expensive at current levels, trading at a ~10% premium to the group on PE, but 23x '18 FCF, a 55% premium, a metric seemingly every other company is judged against. Boiling all this down to a risk-reward scenario using our upside/downside analysis, we see ~10% downside overall vs down 5% for the group. On upside, most of the short cycle optimism comes from a quick turn pick-up versus depressed expectations, though long cycle orders at GE limit the element of surprise, while expectations have yet to come down, with '18 cut by ~8% versus a collection of short cycle names that have seen 15% cuts on average. On the stock, our ISM related analysis shows GE is typically a laggard in an improving short cycle industrial scenario. On the downside, safety has always been a key aspect of the Bull case. Indeed, GE Industrial EPS only went down 10% in '09. This time, however, weak FCF and what we estimate as the potential for a ~20% earnings decline, not that different from the group, limits the degree of immunity. While equipment backlog is solid and comparable, there are key differences, most notably tougher pricing in key equipment markets (+5% 4 quarters leading up to '09 for Power/Renewables V ~1-2% today, with a negligible value gap). Services as defined by LTSAs are still meaningful and positive, but there are some services that are counted as more of an annuity than they actually are, such as AGPs, a ~\$2 B business that is a discretionary, big ticket transaction, almost book and ship, at ~15% of Power services sales – this would likely decline precipitously in a downturn. Lastly, and below the line, tax rate probably can't be counted on to provide support (~18.5% versus the 25.6% which went to 21.8% last cycle).
- **UW with \$27 PT.** All of our calls are relative, and this is no different. Our PT of \$27 shows ~10% downside versus our group at +1%. When it comes to an earnings multiple, we don't argue that these are not "good businesses", what we argue with is ability to consistently outperform and, ultimately, what makes a premium like the one at Danaher is FCF, and here, a 22.5x multiple, or a 55% premium is unarguably expensive. Our PT of \$27 assumes a sector type P/E multiple, but a still rich 20x FCF and a still solid 3.4% yield from a dividend that consumes almost all of ongoing FCF. We would change our thinking if FCF can show material improvement and reinstate the potential for gradual dividend increases without taking on debt or eating into the ~\$35 B in GECS proceeds.

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C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Key Investment Points

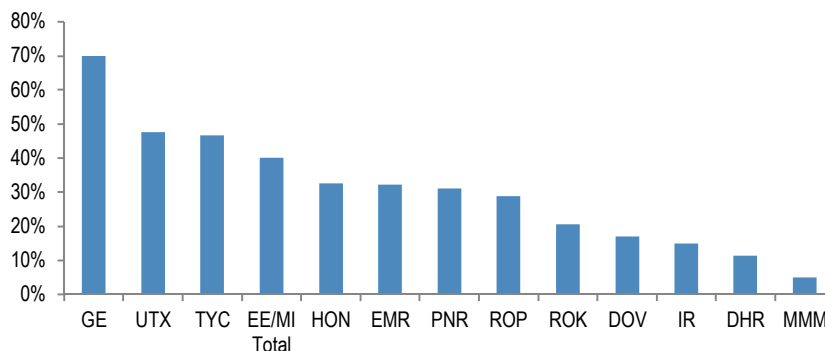
The GE story has been a busy one, with dramatic portfolio change on the GECS side, the largest deal in its history with Alstom, various financial frameworks, an activist, IOT emphasis, and the first year of stock outperformance since 1999, including a company/activist sponsored "\$2+" EPS target. By and large, while EPS dilutive, the moves have been positive when considering future positioning, and there certainly seems to be something "different" here. However, by the numbers, what we have seen is core operating performance that is below plan, and, at current, a consensus expectations curve that remains too high, FCF that is structurally weakest in the sector, and, with that backdrop, expensive valuation, with limited incremental catalysts to change the narrative. In the end, we are sticking to what the numbers say, and on this basis for now, we take the non-consensus, negative side of the trade and are re-assuming at UW.

Positives (Well Communicated, Consensus)

Backlog visibility is solid and above average

GE's 'reported' backlog is unarguably the highest vs industrial peers, and franchises here are solid as market leaders. This is a key part of the Bull thesis as it implies GE likely holds up well in a downturn scenario, with above average visibility driven mostly by the Aviation businesses and Power. Additionally, while the services backlog GE reports is somewhat aggressive, given it relates to contracts that extend over a multi-year period, even adjusting for this, we see 10-15% of services revenues in a contract to be delivered in the forward year. In total, looking at NTM backlog, which in our view is a more precise indicator, using filings and conversations with management, we see backlog/revenue of ~65-75%, above the peer average of ~30-35%. This should provide a degree of stability that is a differentiator.

Figure 1: NTM Backlog/Revenue



Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
12 May 2016

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Internal rate of change is positive, including management incentives

We buy the impact of a new way of doing business within GE, highlighted by a broad set of changes in '15 to more closely align incentive compensation with performance, a positive change. Key changes include aligning the overall bonus pool funding to key financial performance metrics including EPS, industrial operating profit, operating margins, FCF and strategic performance measures, all of which compared to a more qualitative judgment prior. A step further, allocation of bonus pools to businesses are now based on each business units' performance of its financial and strategic goals including ROIC, all of which are established at the beginning of the year each year. Finally, individual bonuses were set at % of base every year rather than y/y % changes and will be adjusted upward/downward to reflect corporate/individual performance and each applicable business unit performance. GE also made changes to its 2016-2018 LTPAs with the key being five equally weighted performance metrics including Industrial Operating + Vertical EPS, Cash Generation (CFOA including GECS dividends + Industrial Dispositions), Industrial Op profit Margin, Industrial ROTC, and Cash Returned (div + repo). Cash returned to investors was added as a metric to the four metrics in the prior program to incentivize returning excess cash to shareowners, and margins replaced the industrial earnings percentage metric in light of the substantial progress made on the GE Capital exit plan.

Risk around a re-run of '08/'09 dramatically lowered with absence of GECS

GE without GECS is indeed lower risk, and removes an overhang for investors interested in just the industrial part of the portfolio. The earlier than expected draw down is positive from a de-SIFI dynamic, allowing a bit more freedom on capital allocation, to the extent they have the capacity. They are giving up something here, namely \$0.05 of EPS dilution, and an ongoing \$1.5B in annual cash up-streamed, though higher value on the higher industrial EPS bolstered by the lower share-count (a transfer of value within), is accretive to stock value. Ultimately, the \$5 value of GECS was essentially in line with our pre-restriction estimation of the SOTP split and we estimate ~\$1.50 of "unlocked value" is the correct math from this transaction, and that. Keep in mind that, despite being "ahead of plan" on timing, we don't see upside from the sale. Our in depth look at capital extraction versus the \$35 B target shows the company has locked down 70-75% of the proceeds through about 80-85% of asset reduction. Also, as per the below, we are not sure how much balance sheet optionality is actually released by the de-SIFI dynamic.

Committed buybacks provides technical support to earnings trajectory

GE has committed to buying back ~\$32B of stock from the GECS proceeds over the next 3 years, a big number that represents >10% of standing market cap, and provides a solid technical support (locked in EPS growth) to the earnings trajectory over the next couple years. We do highlight that this is already embedded in consensus (and our) estimates unlike HON, which has as similar degree of capacity but hasn't been discounted. Our current 2016-2018 EPS estimates show a CAGR of ~12%, with ~6% coming from buybacks alone.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
12 May 2016

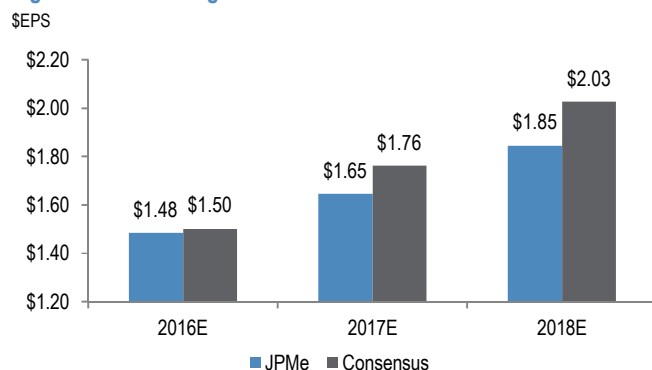
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Risks (More Than Offsetting)

Earnings risk: consensus is too high...

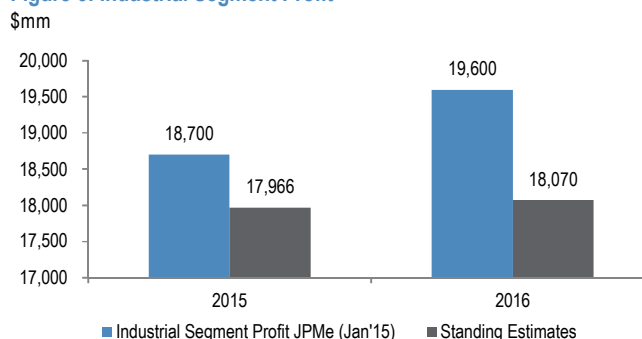
One of the key hurdles to multiple expansion and stock outperformance in the past has been perpetual consensus revisions, with a \$2 target somewhat of a carrot on the stick since 2011. With the sale of GECS, management officially set its own bar, at \$2+ in 2018, ultimately with an activist sponsor. While initially, a mid single digit core profit CAGR (x-ALO) from the '14 base to get to ~\$2 seemed easy (~\$21 B in core profits), 1% in '15, followed by what now looks like a flat '16 as per our estimates, along with a lack of visibility on a material pickup in '17 makes it heavily loaded into an '18 that would need to grow ~15% y/y off our '17 estimate. We are establishing a 2018 number of \$1.85, well below the Street at \$2.03 on fundamentals. Track record suggests more downside than upside, and we think its notable that '15 ultimately came in at \$18 B, versus our standing below consensus estimate of \$18.5 B prior to restriction, and management guidance of “++” (implied ~\$19 B+), while our below consensus segment profit number for '16 prior to going on restriction was \$19.5B versus what is now standing guidance of \$19B+, and our new estimate of \$18 B. In other words, the company has not proved an ability to execute in the past year, despite hitting headline EPS guidance.

Figure 2: GE Standing EPS JPMe vs Consensus



Source: Bloomberg, J.P. Morgan Estimates

Figure 3: Industrial Segment Profit



Source: Company Reports, J.P. Morgan Estimates. Note: 2015 is Actual reported vs Jan'15 JPM estimate

Table 1: Difference Between Current and Prior (April'15) JPM Estimates

\$mm	2015 (Actual vs Prior JPMe)	2016 (Current JPMe vs Prior JPMe)
Segment Profit	(624)	(1,546)
Operating Corporate	68	992
Adjusted Corporate	305	492
Interest Income	(20)	(20)
Income Taxes	773	350
Share Count Difference (%)	-1%	-3%
Industrial EPS	+\$0.02	+\$0.04

Source: Company reports and J.P. Morgan estimates

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Aero is solid but LEAP dilutive, HC profit gains more than offset by Oil/Gas/Transportation/Connected Energy, Power a swing factor but not enough growth here, our comprehensive discussion of fundamentals is on pages 65-162

....with mixed fundamentals...

We would characterize our below consensus estimate as balanced. On the positives, Aero top line is solid, though the combination of a wind down of a highly profitable CFM56, and LEAP dilution offsets, with the potential unit declines in the out years, Healthcare should be modestly positive, but not by much with a stubborn ~2% headwind from annual price pressure. At Oil/Gas, with record low standing book/bills, and a delay in the impact of orders price pressure, we see declines in '17 as LNG risk hits and longer cycle subsea remains challenging. On smaller businesses, EM is weaker than expected on oil/gas pressure, while Transportation is in a downturn with the onset of renewed competition in 2H16. Power is key and here we see slowing AGP growth (services) and a mixed environment for new equipment with a stubbornly competitive environment in HDGTs a long term headwind, aero-derivatives remain tough, and, while mix dilutive, PTC dynamics around Wind should be a positive. We do not argue with ALO accretion though note 2,200 bps of margin expansion from present can hardly be viewed as a “layup”. Areas where there could be downside include Transportation, Energy Connection, Aero derivatives, and commercial Engine OE deliveries.

Table 2: Simplified 2015-2018 Segment Profit Bridge

\$mm except per share

2015 Base Actual	\$1.31
Share count Difference (2018-2015)	\$0.29
ALO Accretion	\$0.16
New Base	\$1.76
2018 JPMe	\$1.85
Difference (Core Growth & Other (tax, corporate))	\$0.09
Absolute Segment Profit Growth (2015-2018, Ex-ALO)	
Aviation	\$602
Healthcare	\$594
Power	\$1,071
Renewable Energy	\$398
Energy Connection	\$170
Transportation	(\$155)
Appliance & Lighting	(\$493)
Oil & Gas	(\$1,175)

Source: Company Reports, J.P. Morgan Estimates.

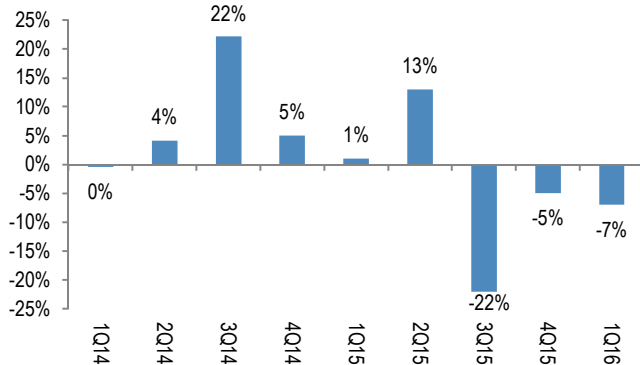
While some may say growth is too low here, in the context of two years of ~1% growth and recent total order declines ranging from 5-22% in the last three quarters, and expected 10% to come in 2Q, we think our view is more balanced.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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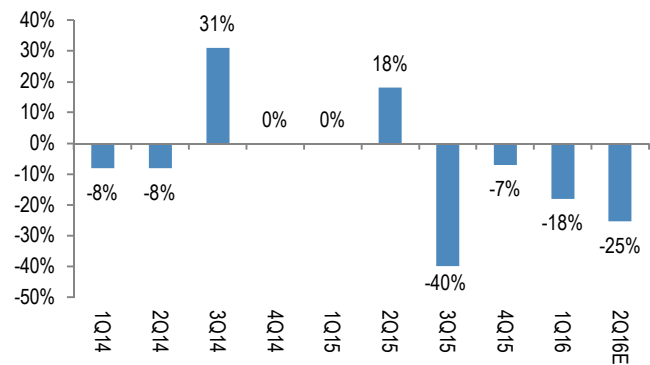
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Figure 4: GE Overall Organic Order Growth



Source: Company reports and J.P. Morgan estimates.

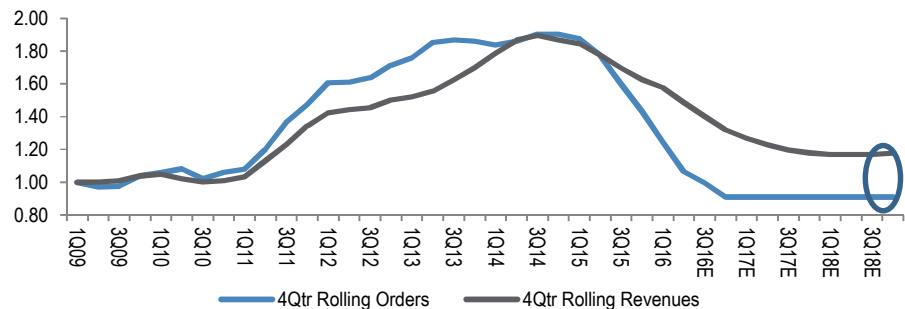
Figure 5: GE Equipment Organic Order Growth



Source: Company reports and J.P. Morgan estimates.

The key headwind, as illustrated in the table above is oil & gas, where we see potential for a 50% decline in profits from 2015 levels. Our estimates currently assume a further ~10% decline in 2017, from 2016 levels and flat growth in 2018, and unless we see some form of rebound in orders between 2016-end and 2018, there is even further downside risks to our estimates. If orders were to stay flat at current levels through 2018, our revenues estimates would need to come down a further 20-25% before recouping with orders.

Figure 6: 4Qtr rolling indexed JPMe revenues in a flat order environment through 2018



Source: Company reports and J.P. Morgan estimates.

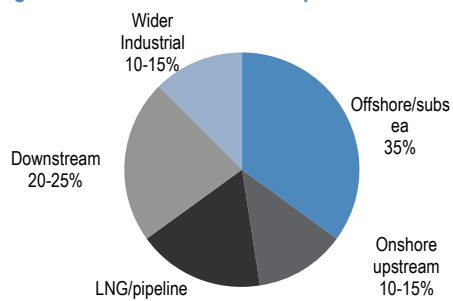
The outlook at GE Oil & Gas is not as straight forward, and relative to the sector, a greater combination of "late cycle" exposure in offshore and midstream markets means any recovery here will lag – onshore exposure is only ~10-15%. Using US onshore rig counts versus orders shows the lagging nature of the franchise, and with book/bills getting worse in recent quarters, we think the debate is more if 2018 can grow y/y, which, in our view is likely down at this stage. Indeed, pricing in orders has been negative now for six quarters, though pricing in revenues was flat in 2015.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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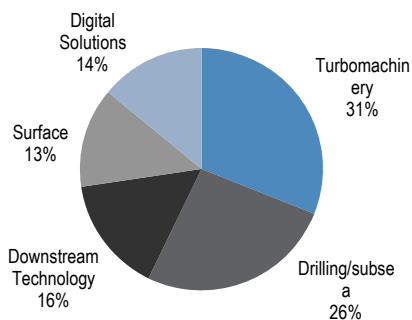
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Figure 7: GE Oil & Gas Vertical Split



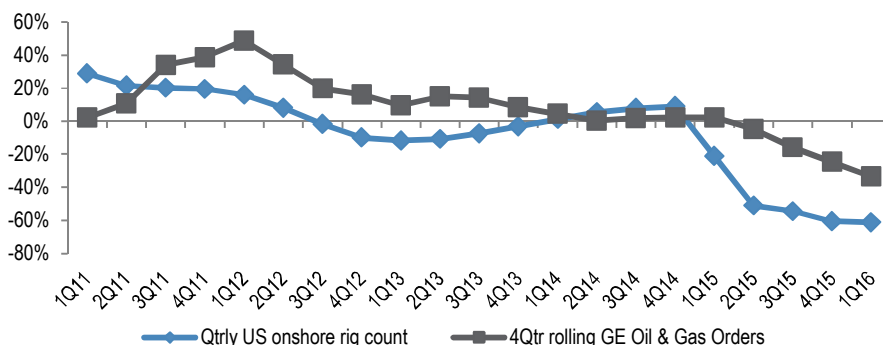
Source: Company reports and J.P. Morgan estimates.

Figure 8: GE Oil & Gas Reported Subsegment Split



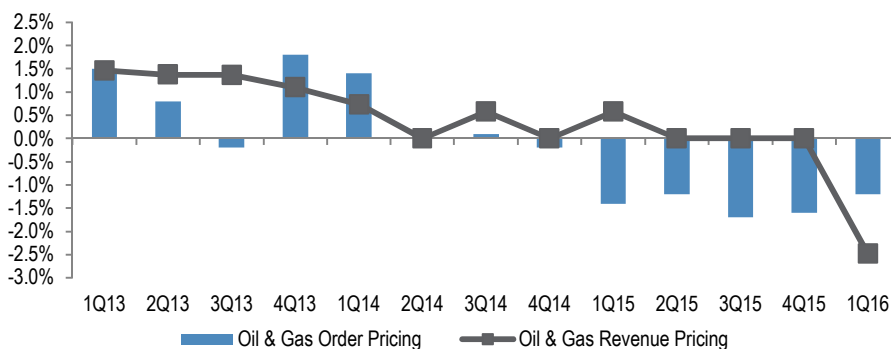
Source: Company reports and J.P. Morgan estimates.

Figure 9: GE Oil & Gas Order Growth vs US Rig Counts



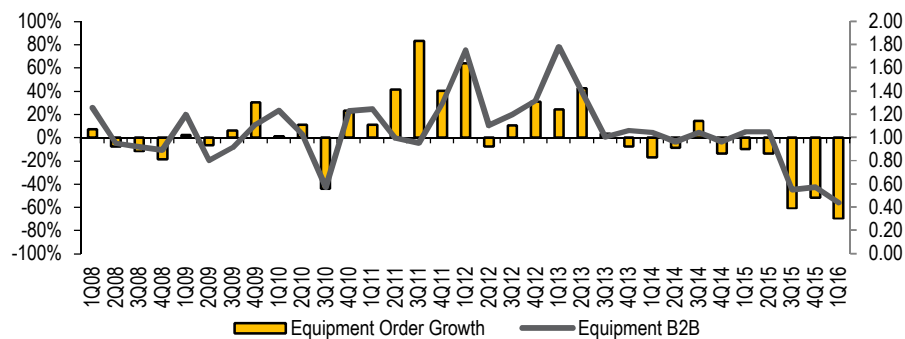
Source: Company reports and J.P. Morgan estimates.

Figure 10: Oil & Gas Revenue vs Order Pricing



Source: Company reports and J.P. Morgan estimates.

Figure 11: Oil & Gas Equipment B2B and Order Growth



Source: Company reports and J.P. Morgan estimates.

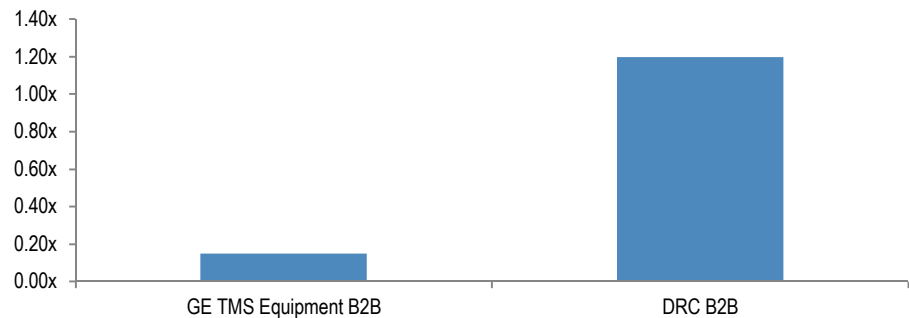
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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There is also the issue of a structural challenge, with likely a dramatic capacity overhang, along with increased competition from Siemens. We recently met with the combined DRC and Rolls business at OTC. The meeting reinforced what management has said recently on earnings calls, that they are taking some share back from GE (see soon to come out McCoy data), as per the book to bill of 1.2x at Dresser this past quarter versus GE TMS equipment orders down 92% on a 23% (19% organic) decline in sales and B2B of 0.15x. Siemens also noted that during the uncertain period while Siemens was closing Dresser, GE was aggressive and gained share. The reps we spoke to talked about the new RB211 aero derivative turbine, redesigned as a lighter weight product for things like FPSOs, for which they won a recent contract in South America as a combined offering. Keep in mind that Dresser, prior to being acquired by Siemens, sourced the majority of its power from GE as part of its compression package, with DRC management noting a competitive disadvantage versus GE owing to an inability to package power and compression at a favorable cost. Much of this is now insourced using the Rolls product line. Our understanding is that GE and Siemens struck a deal so that “alliance” customers would still use GE aero packages, which the rep we met with said represents about 20% of the market. This still means losses for GE aero derivative.

Figure 12: GE Turbomachinery Equipment B2B vs DRC B2B in 1Q16



Source: Company reports and J.P. Morgan estimates.

...historically limited upside in a better economy...

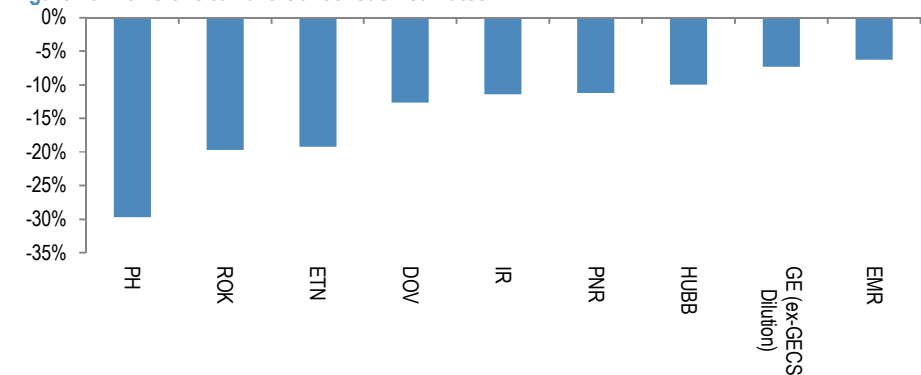
It's a legitimate debate that things in the industrial economy are getting better as per an ISM that is picking up from recent lows. While positive for some of the shorter cycle companies in the sector, the impact on GE, given long cycle capex driven dynamics, is less meaningful. Our fundamental upside scenario for '17 has in line organic growth versus the sector average. Our analysis around ISM and GE's leverage to potential improvement, shows GE typically sits out these types of rallies. Additionally, with the growth needed just to hit a consensus that was set in better times over a year ago, we have the added issue of expectations not being lowered enough to be able to beat with a little bit of good short cycle economic use, like at others. Indeed, a look at short cycle names like ROK, ETN, PH, EMR, DOV, PNR, and IR shows an average of ~15% in EPS cuts since last April, with an '18 consensus that is a ~10% CAGR from '16, while GE's number has only come down primarily owing to the dilution from the GECS asset sale, with an EPS CAGR required at ~15%. This said, a look at '16 profits shows GE cuts were in line with group, showing the base for core growth has eroded while forward EPS has stayed high.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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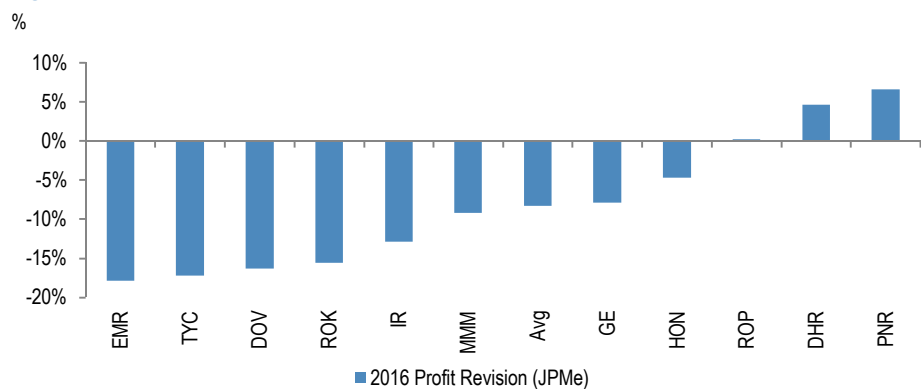
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Figure 13: Revisions to 2018 Consensus Estimates



Source: J.P. Morgan estimates, Bloomberg.

Figure 14: 2016 Profit Revisions (March '14 to Now)



Source: Company reports and J.P. Morgan estimates

...and GE Industrial potentially not as immune as last cycle

GE Industrial as a stand alone was a solid "safe" place to be last cycle which forms a key aspect of the Bull case. Indeed, GE Industrial EPS only went down 10% in '09, among best in class. However, this time is different, and we see the potential for a ~20% decline in segment profits (and EPS), not that different from the group. While equipment backlog is solid and comparable, we see several differences this time around including a tougher pricing for both segments (+5% 4 quarters leading up to '09, driving a ~\$1.8B value gap V ~1-2% today). Services still help, though the high level backlog includes multi-year agreements, and adding in our estimate of true 1 year forward visibility shows total visibility of ~65-75% of forward year sales, still best –in class vs the group but not as strong as the headline backlog suggests. Moreover, there are some services that are counted as more of an annuity than they actually are, such as AGPs, a \$2 B business that is a big ticket transaction, almost book and ship, at ~15% of Power services sales, which would likely decline precipitously in a downturn, while the "services" side of Oil/Gas has average declines of ~10% over the past 4 quarters, clearly worse than the EE/MI sector average. Lastly, and below the line, tax rate was still somewhat high last cycle going from ~26% to 22%, while a standing rate of ~17% likely leaves little wiggle room to cushion the blow of weaker operations.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 3: Y/Y Order Pricing in Energy (Majorly P&W)

Energy	Y/Y Order Pricing
1Q08	4.0%
2Q08	5.0%
3Q08	6.0%
4Q08	5.5%
1Q09	3.7%
2Q09	2.9%
3Q09	4.0%

Source: Company reports and J.P. Morgan estimates.

Table 4: Y/Y Order Pricing in Power & Water (1Q16 is just Power and excludes Renewables)

Power & Water	Y/Y Order Pricing Legacy	Renewables
1Q14	-0.4%	
2Q14	0.0%	
3Q14	1.3%	
4Q14	-0.7%	
1Q15	-0.5%	
2Q15	0.1%	
3Q15 (JPMe)	1.5%	
4Q15 (JPMe)	3.8%	1.9%
1Q16 (JPMe)	2.0%	-0.2%

Source: Company reports and J.P. Morgan estimates. For 3Q and 4Q15, Legacy Pricing

Assumptions are JPM

Table 5: Y/Y Profit Growth in Near-term recession

	% of profits (2016E)	Profit Decline in Recession	Contribution
Power (inc. Alstom)	29%	-2%	0%
Renewables	4%	-25%	-1%
Oil & Gas	8%	-23%	-2%
Energy Connection	2%	-32%	-1%
Aviation	32%	-21%	-7%
Healthcare	17%	-15%	-3%
Transportation	6%	-67%	-4%
Appliances & Lighting	2%	-25%	-1%
Total			-18%
Group Average (JPMe)			-25%

Source: Company reports and J.P. Morgan estimates.

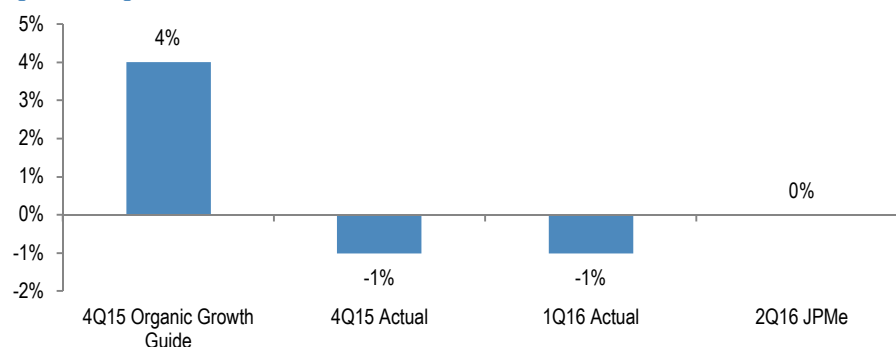
Indeed, aside from the miss to last year's standing guidance, which was not so unusual versus a group that missed numbers generally across the Board, the company maintained the guide and made positive comments even as of the end of the 3Q that were missed in 4Q. Notably, CEO Jeff Immelt had guided to 4Q organic growth "pretty consistent" with the 4% that had been booked YTD, with the end result at -1%. A revenue miss of this size, blamed on push outs, followed by a 1H16 that is set to decline y/y (down ~7% on our estimate on segment profits), implying no real bounce back and suggesting the earnings stream may not be as visible as many believe.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
12 May 2016

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Figure 15: Organic 4Q15 Guide vs Actual and 1H16 JPMe



Source: Company reports and J.P. Morgan estimates.

FCF conversion low

GE's FCF conversion is worst in the sector, and while the company defined conversion can get better (excluding ALO/GECS), with GGE core Industrial EPS at only 80% of our '18 EPS, improvement in the core does not have a 1 for 1 impact and we do not foresee enough improvement in the years to come. To start, using the company definition, the company reported Industrial FCF of \$9.8B, or \$0.98/share, calculated by taking CFOA, subtracting out GECS dividends, then net PPE, and adding back negative ALO FCF in 4Q15, representing 85% conversion on Industrial operating earnings (which excludes non-op pension), a respectable rate but at the low end of a group that ranges from 85%-130%, with an average of 100%. This is not such a simple story, as GE Capital, and ultimately ALO, do have an impact on conversion for valuation purposes, and represents a significant difference versus others where conversion is a more straight forward conversation (ie – FCF conversion versus consensus estimates for P/FCF analysis purposes). Here, adding back \$0.17 of GE Capital EPS gets us to the \$1.31 in total EPS, and when compared to this number conversion moves to 75% (70% including negative FCF from ALO), and over the last three years we estimate ~70% versus its mega cap peers at ~100%. We add back GE Capital EPS because going forward it will not be throwing off cash but is part of the valuation discussion as a part of consensus EPS.

Table 6: Free Cash Flow Walk, per GE

In billions, except per share data

	2015A	
GE Industrial CFOA	\$16.4	
-Gross capex	3.8	
+Dispositions of PP&E	0.9	
FCF	\$13.5	
-GE Capital dividends	4.3	
Industrial FCF	\$9.2	
+Alstom use of cash (negative CFOA, less capex)	(0.6)	
Adjusted Industrial FCF	\$9.8	
		Per share
GE Industrial operating earnings (adds back non-operating pension)	\$11.4	\$1.14
% conversion	85.5%	
+GE Capital verticals (non-GAAP)	1.7	0.17
Total reported earnings (consensus)	\$13.1	\$1.31
% conversion, including GE Capital	74.6%	
% conversion, including ALO and GE Capital	70.2%	

Source: Company reports.

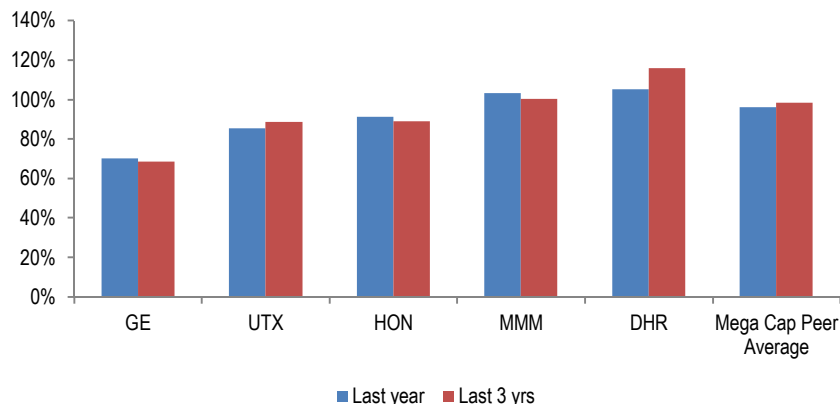
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
12 May 2016

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Figure 16: GE Lags Mega Cap Peer Group on FCF Conversion

FCF Conversion as Traditionally Defined



Source: Company reports, and JPMorgan estimates.

This is simple enough and straight forward. However, looking ahead, there are dynamics and underlying quality issues within this number that have to be taken into account like the coming ramp in pension funding (>\$2B mandatory for the big GE Pension Plan in 2017, as GECS adds \$7B in liabilities), a run rate of >\$1B in other investing cash flows related to things like software, ERPs, licensing, engineering tools, and JVs, including supplier investments and the GE Ventures business, which, as power our analysis is GE specific, and the inflow of low cash return ALO businesses. While the conversion as defined by GE can possibly move a bit higher, driven by blocking and tackling on working capital, and some benefits related to timing (moving past the big product launches, and matching of flows from product services sales), these other items will make improvement in conversion versus consensus estimates a challenge and, whatever way it's defined, represent a significantly lower FCF/share than shown by merely using consensus estimates at face value.

Table 7: Free Cash Flow Walk, JPM Modified Version

In billions

	2015A	2016E	2017E	2018E
GE Industrial CFOA	\$16.4	\$30.8	\$22.3	\$17.8
-Gross capex	3.8	4.4	4.1	3.8
+Dispositions of PP&E	0.9	0.7	0.8	0.8
FCF	\$13.5	\$27.2	\$19.0	\$14.8
-GE Capital dividends	4.3	18.0	11.0	2.5
Industrial FCF, including Alstom	\$9.2	\$9.2	\$8.0	\$12.3
-All other investment activities	(1.3)	(1.0)	(1.0)	(1.0)
JPM Modified Industrial FCF	\$7.9	\$8.2	\$7.0	\$11.3
GE Industrial operating earnings (adds back non-operating pension)	\$11.4	\$12.0	\$12.8	\$14.2
% conversion	69.0%	67.8%	54.7%	79.2%
+GE Capital verticals (non-GAAP)	1.7	1.6	1.5	1.5
Total reported earnings (consensus)	\$13.1	\$13.6	\$14.3	\$15.7
% conversion	60.3%	60.1%	48.9%	71.9%

Source: Company reports, and JPMorgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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There are also some quality issues with regards to GE Capital and its influence on comparability. Notably, this all in number includes receivables factored internally, a legitimate business practice, but a new disclosure shows a cumulative \$13B in receivables that remains on the GE Capital balance sheet, a number that grew by \$0.5B last year. In context of the remaining GE Capital, the \$13B balance is large compared to the expected \$90B of ENI (2017), and it also shows that the consolidated entity is not generating as much cash on a net basis as it would seem at GE Industrial (these transactions increased GE CFOA by \$1.6B in 2015). In an illustration of a conservative way to equalize the comparison to other Industrials, we merely subtract GE Capital FCF from GE Consolidated FCF, getting us to \$7.7B versus the \$9.2B reported. Over a 3 year period the reported GE Industrial FCF has been on average \$0.7B higher than this implied number (see below). We agree that this can be viewed as part of normal business practice, though we note that not one company we talked to in our sector factors receivables in a material way, with one company going so far as to say this is a “low quality” practice. Taking this one step further, and deducting other investing activities (~\$1B) per the analysis in the above JPM Modified Version, the most conservative definition of FCF becomes ~\$6.5B.

Table 8: Illustrative Free Cash Flow Walk, Most Conservative Definition

In billions

	2013	2014	2015	
GE Consolidated GE CFOA	\$28.5	\$27.7	\$19.9	
<u>GE Consolidated Capex</u>	<u>(4.0)</u>	<u>(4.2)</u>	<u>(4.3)</u>	
GE Consolidated FCF	\$24.5	\$23.5	\$15.6	
GE Capital CFOA	\$19.3	\$17.9	\$9.6	
<u>GE Capital Capex</u>	<u>(0.9)</u>	<u>(1.5)</u>	<u>(1.7)</u>	
GE Cap FCF	\$18.4	\$16.4	\$7.9	
GE Industrial FCF Implied (Consolidated minus Capital)	\$6.1	\$7.0	\$7.7	
Reported Industrial FCF	\$5.0	\$8.8	\$9.2	3-yr avg
<i>Difference</i>	<i>(1.1)</i>	<i>\$1.8</i>	<i>\$1.4</i>	<i>\$0.7</i>
<i>Note: Intercompany Receivables transactions</i>	<i>\$0.1</i>	<i>\$2.2</i>	<i>\$1.6</i>	<i>\$1.3</i>

Source: Company reports and JPMorgan estimates.

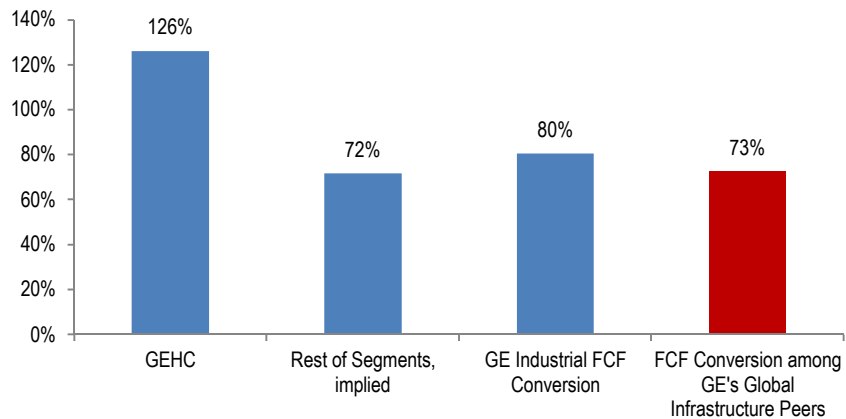
The question is if this can improve and we think it can, but not materially in what are competitive industries with challenged terms/timelines on global deals that stretch the supply chain (aero-derivatives are book and ship, H-Frame lead times <12 months). Indeed, stripping out Healthcare, for which management has disclosed 126% conversion, shows the rest of the portfolio converting even lower. Looking at peers within these markets shows this is a legitimate level in what are competitive global markets.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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Figure 17: GE Industrial FCF Conversion by Segment

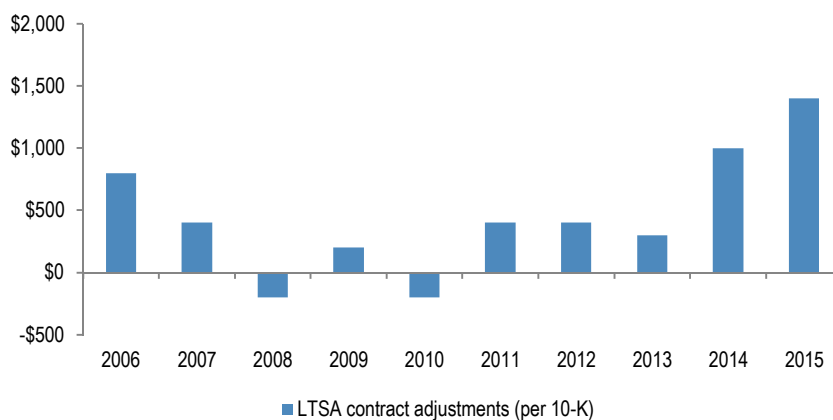


Source: Company reports, and JPMorgan estimates.

Another key aspect of the weak FCF conversion is LTSA contract adjustments - these non-cash gains have increased significantly as a component of earnings over the past few years. As per the 10-K, such adjustments increased earnings by \$1.4B, \$1.0B and \$0.3B in 2015, 2014 and 2013, respectively, material numbers which equate to ~10% of reported industrial net income and all non-cash. These gains represent outperformance versus contracts highlighting strong execution which, as the company says is "a good thing". We don't disagree, but from a pure accounting perspective, these types of earnings are "cash poor".

Figure 18: LTSA Contract Adjustments

In millions



Source: Company reports, and JPMorgan estimates.

Putting it all together, looking out over the next three years, using all three definitions, we see FCF/share and conversion deteriorating in '16 and '17 prior to getting a bit better in '18. Our estimates and our walks using all three definitions are below, including a simplified view using EPS, broken down by GECS contribution, ALO earnings (using a certain improved conversion rate) and a "core" GE Industrial FCF per share number. For '18, a more normal year (lower pension contributions and better ALO FCF), we show how our \$1.85 estimate turns into ~\$1.35 in FCF per share, or 70-75% conversion, or ~\$1.45, and 90% conversion by GE's definition.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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Table 9: FCF Conversion by Three Different Definitions

In millions, except per share data

	GE Defined FCF View		JPM Modified FCF View		Most Conservative FCF View	
	2017E	2018E	2017E	2018E	2017E	2018E
Consensus EPS	<u>\$1.76</u>	<u>\$2.03</u>	<u>\$1.76</u>	<u>\$2.03</u>	<u>\$1.76</u>	<u>\$2.03</u>
Difference	<u>0.12</u>	<u>0.18</u>	<u>0.12</u>	<u>0.18</u>	<u>0.12</u>	<u>0.18</u>
JPMc EPS	\$1.65	\$1.85	\$1.65	\$1.85	\$1.65	\$1.85
GE Cap EPS	<u>0.17</u>	<u>0.17</u>	<u>0.17</u>	<u>0.17</u>	<u>0.17</u>	<u>0.17</u>
Implied Industrial EPS	\$1.48	\$1.68	\$1.48	\$1.68	\$1.48	\$1.68
Implied Industrial Net Income	\$12,840	\$14,229	\$12,840	\$14,229	\$12,840	\$14,229
<u>Alstom Net Income</u>	<u>581</u>	<u>1,330</u>	<u>581</u>	<u>1,330</u>	<u>581</u>	<u>1,330</u>
Core Net Income	\$12,259	\$12,899	\$12,259	\$12,899	\$12,259	\$12,899
Core FCF	\$7,803	\$11,601	\$6,803	\$10,601	\$6,103	\$9,901
ALO FCF	203	665	203	665	203	665
GE Cap FCF (No dividend)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total FCF	\$8,006	\$12,266	\$7,006	\$11,266	\$6,306	\$10,566
FCF/Share	\$0.92	\$1.44	\$0.80	\$1.33	\$0.72	\$1.24
GE P/FCF	33.1	21.1	37.9	23.0	42.1	24.5
Core Industrial FCF conversion	64%	90%	55%	82%	50%	77%
Reported FCF Conversion (all-in)	56%	78%	49%	72%	44%	67%

Source: JPMorgan estimates.

Balance sheet optionality not differentiated...

Consensus seems to constantly talk up GE's abundant cash optionality, pointing to a low headline net debt/EBITDA. We disagree. First, as for ongoing FCF, taking the above FCF number set against an ongoing dividend of ~\$8 B, and a potential Alstom "put" option of ~\$2.5-3 B leaves negative available cash flow of \$1 B. Taking a more consolidated, cumulative cash view, keep in mind that the \$90 B is already committed, with \$35 B attributable to GECS proceeds/related buybacks, used to limit dilution from the transaction, with ~\$25 B to dividend, ~\$10B in net capex, ~\$3B in "other investing" activities, which is at a \$1B+ run rate/yr and then \$6B in regular buyback to offset normal share count dilution. There are other cash calls embedded here including pension, for which the stranded nature of the GECS pension plan has driven the now consolidated pension plan from \$20 B in prior calcs to \$27 B. As part of this there are ERISA funding requirements that start in 2017 at \$2 B per year, another headwind discussed above in the FCF section. Also keep in mind that there is a vast majority of cash that is held overseas, making quarterly cash management a challenge, similar to others. Lastly is the minor detail of GE now guaranteeing GECS debt, which, assuming the wind down ends as planned this year, currently stands at \$75B. Ultimately, we just don't see such a clean "cash rich" situation here.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 10: Expected Sources and Uses of Cash, 2016-2018E

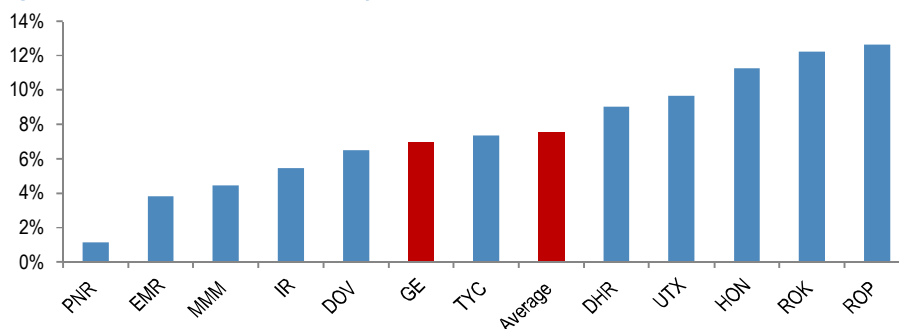
In billions of US\$

	'16-'18
Sources of cash	
Industrial CFOA, 2016E	12.8
Industrial CFOA, 2017E	11.3
Industrial CFOA, 2018E	15.3
Divestiture Proceeds (2016-2018E)	3.5
P&E Dispositions (2016-2018E)	2.3
GECS dividends (2016-2018)	31.5
Total sources	76.7
Uses of cash (Committed)	
Dividend 2016E	(8.5)
Dividend 2017E	(8.1)
Dividend 2018E	(7.9)
Capex 2016E	(4.4)
Capex 2017E	(4.1)
Capex 2018E	(3.8)
Other Investing Cash Flow (2016-2018E)	(3.0)
Buyback (Including GECS dividends, 2016-2018E)	(37.5)
Total uses	(77.2)

Source: Company reports, and JPMorgan estimates.

In the end, giving management the benefit of the doubt on their communications, we view the \$20 B target for extra leverage as good, but more of a best case type of number for incremental deployment. Even considering this happens, at 7% of the market cap, GE's optionality is limited, with the key aspect here the essentially negative available FCF as per the above.

Figure 19: GE Balance Sheet Optionality vs Group



Source: J.P. Morgan estimates.

...and any large deal would be dilutive given buybacks are already discounted, while ALO is far from credibility building yet

All this said, while management has somewhat of a covenant with the shareholder around buybacks, with the \$35 B being taken out of GECS, there is always the chance of a pivot for a larger deal, which would certainly be another strategic move to consider in narrative. Oil/gas is certainly in the discussion, with many viewing today as a good contrarian time to execute, something we don't disagree with. However, as per our analysis below, for every \$10 B not bought back, and used for an acquisition at, for example, an EBITDA multiple of a large oil services company, we show '18 dilution at \$0.02, which means this is not coming for free.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
12 May 2016

J.P.Morgan

Table 11: Oil & Gas Deal Accretion (2018E) Scenario

Purchase price	10,000
x EBITDA	15.0
Sales	4,444
EBITDA margins	15%
EBITDA	667
Assumed D&A/sales	4.0%
Synergies (% of sales)	2.0%
EBIT, post-synergies	578
Net income (25% Tax)	433
Per share (annualized)	0.05

Source: Company reports and J.P. Morgan estimates.

Table 12: Dilution from Deal vs Ongoing Buyback

Standing 2018 JPMe	1.85
Cut 2016 Buyback by \$10B	(0.07)
\$10B Oil & Gas Deal at 15x EV/EBITDA	0.05
New 2018 EPS	1.83

Source: J.P. Morgan estimates.

Keep in mind that the above does give some benefit of the doubt on being a smart buyer close to the bottom, but other than the fact the oil/gas industry is depressed, we are not quite sure why one should be so generous. Aside from the recent oil/gas deals, which we would characterize as somewhat mixed, ALO is the most prominent event on the Industrial side, and here both cash and entry earnings are below expectations. To be clear, we are still discounting \$0.16 of EPS from ALO, but are hesitant to consider it locked with a starting point on EBITDA that is \$1.5B below when the deal was announced (headline EV/EBITDA of 7.9x), requiring 2,200 bps of synergies to hit targets. Accounting conventions will make margins look better over time, though a \$28 B backlog, something highlighted as a positive, to us represents a tail on poorly written business that will take >3 years to work through, a cash issue. We also struggle with how \$3 B of synergies is achievable for a business in which ~50% (Steam Power) is in secular decline. We see cost takeout but also lost revenues meaning the \$3 B of synergies is not necessarily \$0.30 of EPS. In the end, we see improvement from standing losses, but only discount in accretion with 50% cash conversion, still a dramatic improvement from the years (4 out of last 5 years had negative cash flow) outflow prior to this deal.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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Table 13: Alstom Deal Metrics: Initial vs Final

	April '14	July '14 (After Divestitures)	May '15 (After Divestitures)	Sept '15 (After Divestitures)	Current (After Divestitures)
High Level Metrics					
'16 EPS accretion	0.08-0.10	0.06-0.09	0.06-0.09	0.05-0.08	0.05
'18 EPS accretion			0.15-0.20	0.15-0.20	0.15-0.20
IRR	high teens	high teens	'strong'		15%+
EV	13,500	10,100		9,500	10,300
EBITDA (FY end, Mar)	1,709	1,354		600	600
EBITDA (LTM Sep'15)					11
EV/EBITDA FY'15	7.9	7.5		15.8	17.2
EV/EBITDA FY'15 PF synergies	4.6	4.0		2.6	2.9

Source: Company reports and J.P. Morgan estimates.

Valuation: premium on EPS, expensive on FCF

Despite having de-rated by ~1,000bps YTD, we continue to see valuation as expensive at current levels, trading at a ~10% premium to the group on 2017 PE (18x) and >100% premium on P/FCF (34x, ~55% premium on a normalized FCF number). Given GE's difference in reporting style vs peers, a low quality EPS and FCF number, we dissect valuation using a number of metrics, which shows the stock trading at a ~20% weighted premium on 2017 estimates (*note we normalize for the 2018 share count in our weighted analysis*). Looking at SoTP, and factoring in all of the \$27B in underfunded pension as debt, we see ~20% downside at current levels, and even breaking out Digital and valuing this part of the business on EV/sales inline with software peers, we see only ~5% improvement vs the regular SoTP (~15% downside from current levels). Finally, boiling all this down to a risk-reward scenario using our upside/downside analysis, we see ~10% downside overall vs down 5% for the group.

Table 14: Valuation on Different Metrics

% premium/discount on 2017

Premium/Discount	Reported EPS Consensus Approach (2017)	GAAP EPS (including amortization, restructuring)	Cash EPS (normalized to exclude amortization on reported EPS)	Adjusted GAAP EPS with BS Upside (including amortization, restructuring, normalized for pension)	Reported Balance Sheet Adjusted P/E	Reported Pension Adjusted P/E	P/FCF	EV/EBITDA
DHR	107%	119%	114%	115%	105%	106%	107%	121%
DOV	106%	103%	95%	103%	106%	105%	88%	91%
EMR	97%	95%	95%	95%	100%	95%	99%	88%
GE*	111%	107%	108%	107%	106%	104%	223%	110%
HON	94%	91%	96%	96%	91%	102%	105%	96%
IR	86%	84%	83%	82%	87%	84%	85%	87%
MMM	118%	115%	122%	123%	122%	122%	122%	112%
PNR	83%	95%	88%	96%	88%	80%	87%	110%
ROK	116%	112%	119%	106%	110%	114%	105%	103%
ROP	145%	141%	130%	131%	137%	142%	121%	129%
TYC	104%	101%	103%	101%	104%	104%	114%	105%
UTX	88%	86%	86%	84%	87%	87%	87%	86%

Source: Bloomberg, Company reports, J.P. Morgan estimates. For GE we use Industrial EV for EV/EBITDA. For EV/FCF we use total EV

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
12 May 2016

J.P.Morgan

Table 15: Valuation on Key Metrics Chosen For Weighted Average Calculation

% premium/discount on 2017

Premium/Discount	Adjusted GAAP EPS (including amortization, restructuring, normalized for pension)	Pension Adjusted EBITDA	EV/FCF (adjusted for Interest)	Weighted
DHR	118%	120%	109%	117%
DOV	102%	91%	88%	95%
EMR	92%	86%	101%	92%
GE*	106%	109%	175%	121%
HON	100%	104%	99%	101%
IR	82%	85%	85%	84%
MMM	119%	116%	119%	118%
PNR	91%	106%	97%	98%
ROK	111%	103%	88%	103%
ROP	138%	127%	114%	129%
TYC	101%	104%	106%	103%
UTX	85%	86%	107%	90%
Factor Model	40%	40%	20%	

Source: Bloomberg, Company reports, J.P. Morgan estimates. For GE we use Industrial EV and EBITDA for EV/EBITDA. For EV/FCF we use total EV

Table 16: Risk – Reward vs Group

	JPM PT (Base Case)	Upside	Downside	Weighted
GE	-10%	11%	-42%	-11%
Group Average	1%	15%	-37%	-4%

Source: J.P. Morgan estimates.

GE is not Danaher

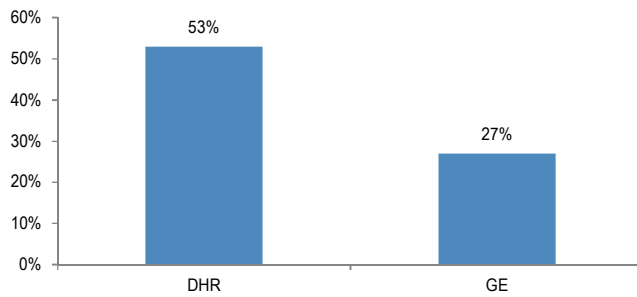
We disagree on a few points in Trian's analysis put out last Sept'15, and a key missing aspect of that presentation (other than the fact we know the difference between a light switch and a gas turbine) is the cash flow, which in this sector, is key to valuation. Here, we call out the comparison to DHR, historically one of the highest value companies in the sector that has traded at a ~20% premium to the market, Trian's argument for GE. The basic math is that DHR trades at 17x 2018 EPS, but a lower P/FCF multiple given historical and standing conversion of ~105% (on cash EPS), which, at current levels, is ~35% above GE's metric, without the benefit of receivables factoring and without an overhang of pension contributions. There is also the gross margin comparison (53% V 27%), and a more nuanced management track record of beating estimates/capital deployment success, but, in the end, it's this simple and a key differentiator as to why GE should not be valued anywhere close. We also highlight that HON took over a decade to get revalued on believable forward earnings, but GE seems to have gotten credit overnight.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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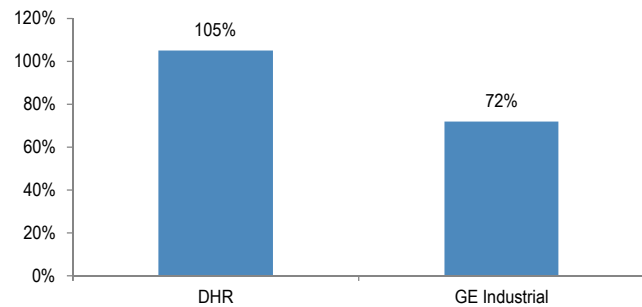
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Figure 20: Gross Margin



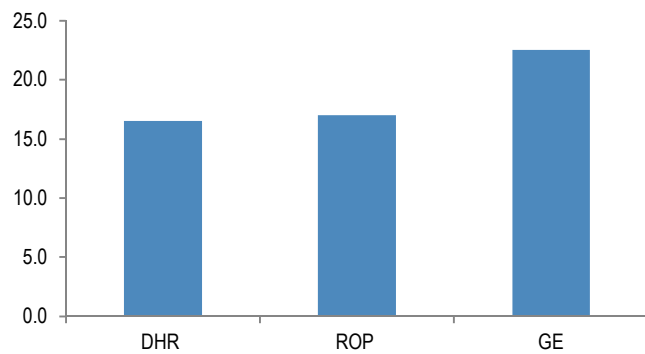
Source: Company reports and J.P. Morgan estimates

Figure 21: FCF Conversion on Reported EPS



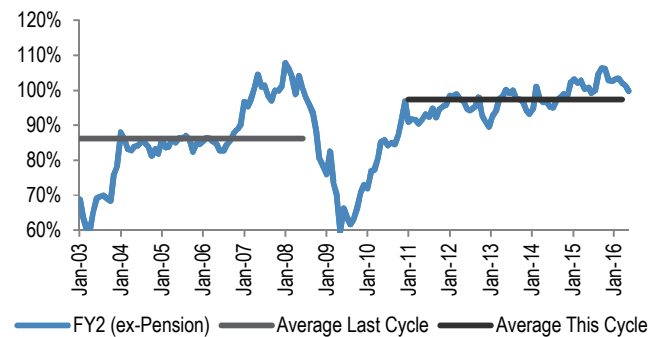
Source: Company reports and J.P. Morgan estimates

Figure 22: GE Price/FCF vs ROP and DHR



Source: J.P. Morgan estimates, Bloomberg.

Figure 23: HON FY2 PE Premium (Adjusted for Pension)



Source: J.P. Morgan estimates, Bloomberg.

Key Debates (Macro and Micro)

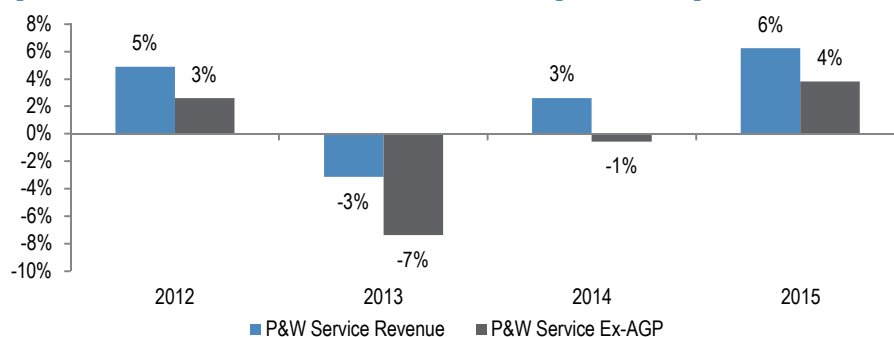
2H16 organic will look good, but doesn't necessarily translate into profits

Optically, going forward we see GE's organic growth profile as favorable vs the group in 2H (up ~4% vs the group up ~1%), largely driven by the strong pickup in HDGT shipments y/y in 2H. However, this does not necessarily translate into profit growth given the high mix of equipment shipments that are close to breakeven margins (the H-turbines are loss making on net this year). Our current estimates call for a slight decline in core profits y/y with majority of the overall increase coming from y/y synergy benefits at ALO. Additionally, as comps on new products get tougher and recently weak orders being to hit, this organic profile will recouple with the group average for '17.

Power: Sustainability of AGPs as support for PGS growth...

At ~35% of GE's vaunted Services machine, Power is a key driver of the story. Here, a combination of a nicely aged installed base and the addition of software has led to the emergence of the Advanced Gas Path upgrade as a key source of growth. Indeed, since its introduction in 2012, "AGPs" have grown to ~105 in units, or around \$1.6 B in revenues, the majority of the \$2B in Digital revenue at GE Power, as well as representing ~15% of Power Services. Simple math comparing the \$400mm in revenues in '12 versus the \$1.6 B now shows AGPs have represented more than all of the growth. It is important to keep in mind that the value proposition of the AGP is to extend maintenance cycles and add more capacity, effectively bringing forward what has historically been future business. GE management says there are many iterations of this program, but the mere fact that its an estimated ~\$15 mm upgrade, an estimated multiples of a normal annual maintenance check, shows its more discretionary in nature and at risk of falling off in a downturn. In the end, our call is for a slowing here, but risk to the downside given we are moving beyond the F-frames bubble (the vast majority of AGPs are F Frame upgrades), which has been such a key support to growth here, and this type of services business would be vulnerable in a downturn.

Figure 24: Power & Water Service Revenue Growth including and excluding AGPs



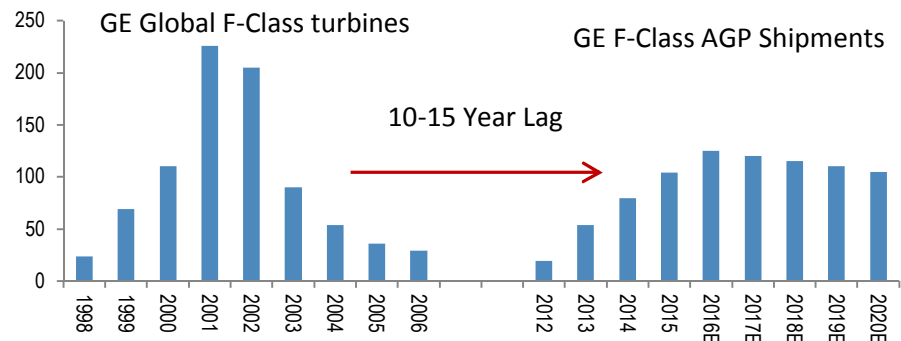
Source: Company reports and J.P. Morgan estimates. For 2015, we have made an assumption based on prior segmentation for comparability services.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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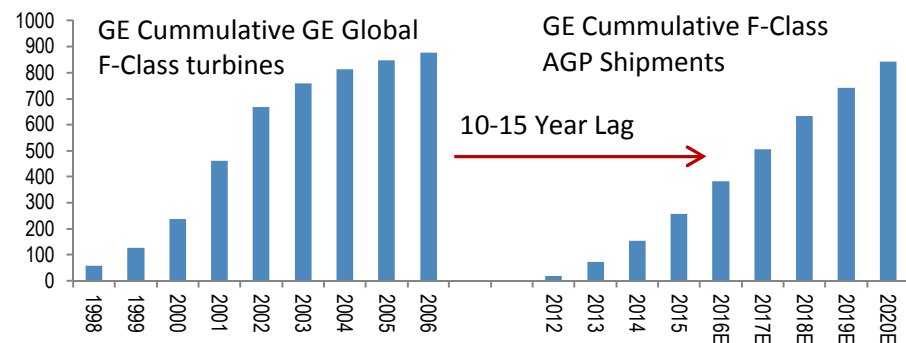
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Figure 25: Illustrative F-Class Annual Turbine Shipments vs F-Class Annual AGP Shipments



Source: Mccoey, Company reports and J.P. Morgan estimates.

Figure 26: Illustrative Cumulative F-Class Turbine Shipments vs F-Class AGP Shipments



Source: Mccoey, Company reports and J.P. Morgan estimates.

...and duration of US HDGT cycle

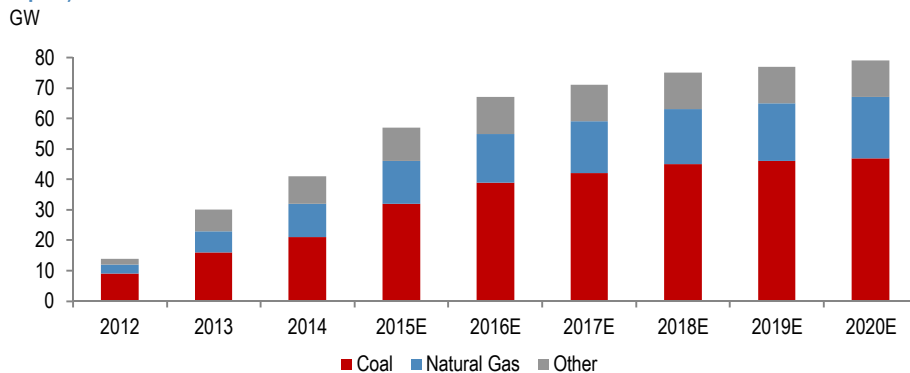
HDGTs have been an area of relative strength recently. While the 107 units shipped last year pales in comparison to the late 90s boom, it's a solid level, with strong share maintained during the recent US coal replacement cycle. Units are expected to be up ~5-10% y/y in 2016 but there is more than meets the eye around these flattish results as underneath the surface there is a major mix shift, not only by type (larger frame turbines), but by geography. Indeed, the US, after a decade of stagnation, has grown to represent 20% of the total MWs and units in '15. To be clear, load growth remains challenged, so this is not "needed capacity" from a demand perspective, the driver here is the long awaited replacement of coal capacity that is coming off line driven by regulatory burdens and cheap gas. Because its not the boom of the '00-'03 time period, it has not gotten much press, but remains a key driver nonetheless. However, as soon as it's come to be noticed, according to the recent LTRA, rough calculation of needed capacity replacement shows we may already past the halfway point here with an end to orders (related to coal replacement) sometime in 2020. Its notable that as the US has come on, oil related demand from places like Middle East and, here in the US, Texas, represents another pot of "peakish" demand, that, more recently, represented as much as >25%% of the global market, while the growth rates in China are also slowing materially. The bottom line here is that as flattish as its been, '16/'17 may be as good as it gets for HDGTs for quite some time.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 27: NERC Cumulative Actual and Forecast Confirmed Retirements (Current, 2015 LTRA report)



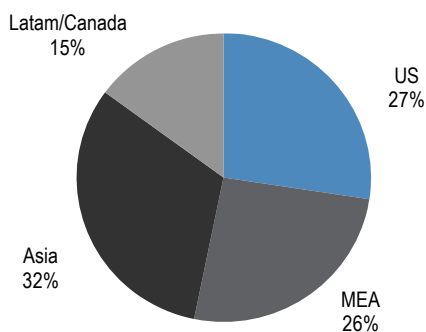
Source: NERC

Table 17: China Power Projection – Year-end installed capacity

Total capacity installed, end –year (MW)	2010	2011	2012	2013	2014	2015	2016E	2017E	2018E	2019E	2020E	2010-15 CAGR %	2015-20 CAGR %
Hydro	2,161	2,330	2,489	2,800	3,018	3,104	3,304	3,504	3,704	3,904	4,104	7.5%	5.7%
Coal	6,833	7,146	7,581	8,194	8,605	9,329	9,679	9,979	10,079	10,129	10,179	6.4%	1.8%
Nuclear	108	126	126	146	199	272	357	452	463	508	631	20.2%	18.3%
Gas	264	338	383	431	557	664	699	716	733	751	768	20.2%	3.0%
Wind	296	462	608	755	958	1,283	1,553	1,823	2,063	2,303	2,543	34.1%	14.7%
Solar & others	3	195	231	148	265	416	566	736	906	1,056	1,206	171.9%	23.7%
Total	9,664	10,596	11,418	12,474	13,602	15,067	16,158	17,210	17,948	18,650	19,431	9.3%	5.2%
Y/Y Growth %		9.6%	7.8%	9.2%	9.0%	10.8%	7.2%	6.5%	4.3%	3.9%	4.2%		

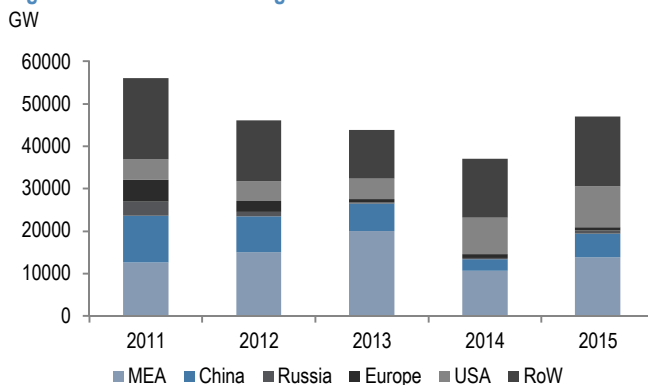
Source: J.P. Morgan estimates.

Figure 28: GE 2015 Orders Split By Region



Source: McCoy, J.P. Morgan Estimates

Figure 29: Global orders for gas turbines >100MW



Source: McCoy, JPMorgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

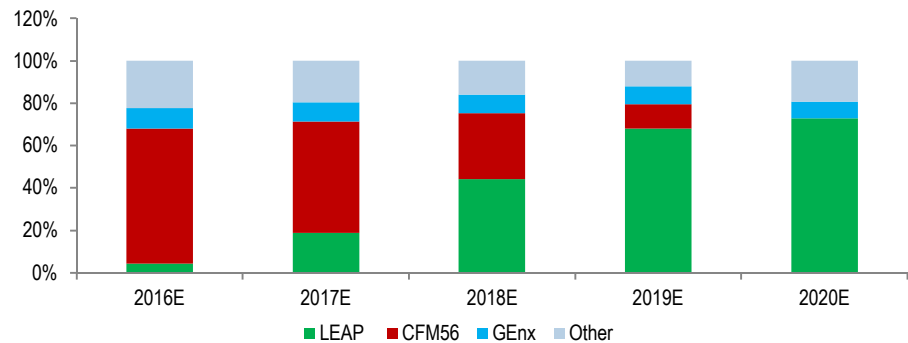
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LEAP transition

Aviation has been the star of the show for GE over the past several years, representing 70% of segment profit growth since 2012, with margins up 360 bps versus the 150 bps seen company wide. There is no debate that this franchise is a juggernaut, with bets made over a decade ago forcing a near monopoly in single aisle, and the most successful engine ever, the CFM56. However, while there is no argument around the franchise vitality here, the integration of a new engine that has by definition less market share, is likely to mitigate outsized profit gains from spares/services in the intermediate term. Important here is not just the impact from engine losses on the new LEAP, its the loss of the CFM 56, which we estimate has a well above average margin. This, combined with the fact that spares comps get tougher, means margin gains will be harder to come by, with debate around whether there is actually downside risk. We are putting this in the debate column, as we give credit for revenue growth and believe the company can hold margins flat, which means our below consensus numbers still incorporate mid single digit growth through this transition. Indeed, SAFRAN recently said they expect a decline in OE margins driven by declines in CFM56 volumes from 2017 onwards as well as headwinds coming from the new LEAPs coming in.

Figure 30: GE Engine Shipment Mix



Source: Company reports and J.P. Morgan estimates.

Despite restructuring actions and hitting margin targets, profits have lagged

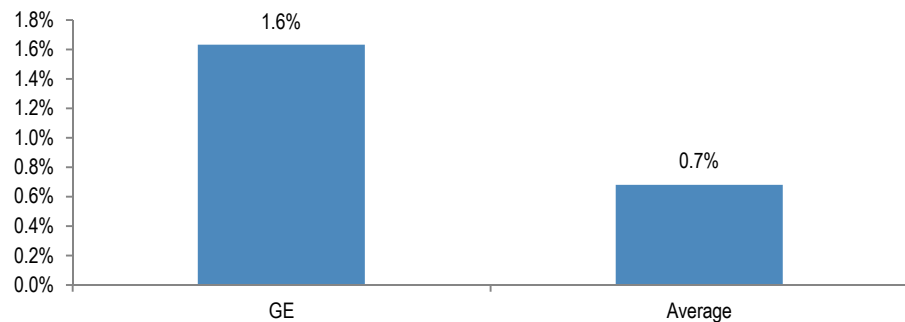
With the largest year of restructuring coming in 2016, a total of \$3.4 B, the ability for GE to continue to transform into a better operating company remains a healthy debate. To us it's unclear. Indeed, GE has taken a sizeable amount of restructuring actions over the last 3 years, easily the highest in our coverage, totaling ~\$5.5B from 2013-2015, roughly \$1.8B/year for the last three years.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 31: GE vs Group Restructuring 2013-2015



Source: Company reports and J.P. Morgan estimates.

Taken at face value, these actions should have resulted in \$3.5B in savings through to the bottom line or 300bps in margin gains. Overall, however, the company grew absolute segment profit by just \$2B over two years, even after a revenue increase of \$8.5-9B and ~\$800mm in value gap (price + raws). As we address in our Digital section, there is heavy investment ongoing as an offset here.

Table 18: Difference between realized and implied savings from restructuring actions

	2014+2015
Implied savings from restructuring	3,345
<u>Less: Other corporate costs reduction</u>	<u>583</u>
Implied segment operating savings	2,761
<u>Less: Simplification savings reported (incl Cost Productivity)</u>	<u>2,220</u>
Difference	542

Source: Company reports and J.P. Morgan estimates.

FX has played a role, hurting absolute profits but helping margins, though ultimate earnings have been disappointing, while headline EPS was helped by below the line items such as tax rate and lower adjusted corporate expense. For 2016, driven by the lower 2015 profit base, our assumptions are tracking ~\$1.5B below prior estimates, or ~\$0.15, but this is offset by lower adjusted corporate expense, lower share count and lower tax rate. Looking at FCF as well, expectations are now tracking ~15% lower than one year ago for 2016. The point here is that key metrics like industrial segment profit and FCF haven't met initial commitments in 2015 and 2016 despite being well down the path of what is defined as "restructuring".

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 19: Original 2015/2016 Expectations Last Year (Pre-April' 2015) vs Current Estimates

\$mm

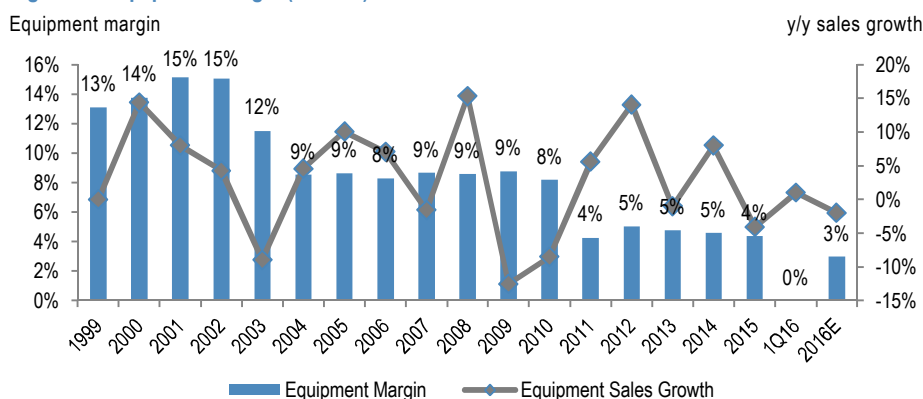
	2015 JPMe Prior	2015 Guidance	2015 Actual	2016 JPMe Prior	2016 Guidance	2016 JPMe Current
Organic Growth	4%	2-5%	3%	0%	2-4%	2%
Segment Profit JPMe (April'2015) Y/Y	5%	'+/++'	1%	19,616	19,000+	18,048
Segment Profit ex-Alstom JPMe (April'2015) Y/Y		'+'	2%	18,411		17,399
Segment Margins (April'2015)	16% (down 20bps y/y)	Up Y/Y	16.5% (up 30bp y/y)	16.3%	15.8%	15.4%
Segment Margins ex-Alstom (April'2015)	16.4% (up 40bps y/y)	Up Y/Y	17.0% (up 80bp y/y)	16.9%	17.1%	17.0%
Adjusted Corporate	(2,412)	(2,400)	(2,107)	(2,392)	(2,100)	(1,901)
Restructuring + Gains (EPS Impact)	\$0.00	\$0.00	(\$0.01)	\$0.00	\$0.00	\$0.00
Tax Rate (ex-Alstom Benefit for 2015, 2016 is all-in)	19.0%	19.0%	16.6%	19.0%	17.0%	16.9%
Industrial EPS	\$1.12	\$1.15	\$1.14	\$1.30	\$1.35	\$1.31
FCF (Industrial CFOA - Gross Capex, ex-ALO)	8,192	8,250	8,268	9,475	8,500	8,098

Source: J.P. Morgan Estimates and Company Reports

Equipment margin dynamics may show some improvement but not enough evidence of a structural change

Management has talked about growing equipment margins from the 2014 levels of 5%. We see numerous headwinds to margins here entering 2016 and likely into 2017/2018 as well. We currently model Equipment revenues to decline 2% y/y in 2016, and while this looks optically favorable, we see mix impacts within the Equipment revenue base driving a potential decline in margins here, which is negative for the bottom line GE Industrial segment margin. For perspective, the swings in Wind and Gas Turbines alone represented a ~20-30 bps mix impact in 2012 (assuming that GTs are just below the OE average). Similarly from 2010-2012, GE Aviation margins were flattish driven by negative mix impacts from the GENx ramp, offsetting the strong pricing gains during that period. While there is potential for margins to improve beyond 2018 as LEAP and H-Turbines come up the learning curve, there is little evidence of any structural change yet that would change this dynamic ahead of future product launches.

Figure 32: Equipment Margin (ex-ALO)



Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Digital and its impact

There is lots being made out of GE Digital, and we do not doubt that "there is something there". The ability to take a large and defended installed base with reams of data and create value out of it is what generally everyone in industrial land is trying to do and GE would seem to be one of the better positioned. However, there are some items to consider. First, GE's definition of "Digital" is quite loose, as the \$5 B includes things like AGPs, which have a significant hardware content to them (~\$1.6 B), the old Healthcare IT business, which has not grown for years (\$1.5 B), while within the other businesses the impact is small with limited critical mass. Additionally, like all IOT stories in industrial land, initiatives are still mostly in pilot phase, and a fragmented customer base that is risk averse makes it hard to proliferate an "inflection" in revenues. Lastly, with such a captive installed base of service revenue that is stocked by new equipment sales, there is always some degree of cannibalization/pull forward. Take AGPs for example, GE garners the up front ~\$15 mm, though extends maintenance cycles and ultimate capacity of the installed turbine, and, in one instance we researched, the customer cut the sales contract. Lastly, versus others in the sector with some type of software angle, GE's exposure is not differentiated.

Table 20: Digital Revenue Breakup

	2015 Digital Revs (\$B)	Digital Growth 2016 Y/Y	2016 Digital Revs JPMe (\$B)	Offering/Solutions
Power	2.0	35.0%	2.8	AGPs, Opflex
Healthcare	1.5	5.0%	1.5	GE Health Cloud, clinical optimization, care system optimization
Transportation	0.4	20.0%	0.5	Train performance + optimization solutions, Customer performance analytics, Non-GE fleet penetration
Oil & Gas	0.3	25.0%	0.4	Pipeline optimization & integration, Field vantage & productivity, Subsea RM&D
Other (EC, Renewables, Aviation)	0.7	5.0%	0.8	Wind PowerUP (Digital Wind Farm), Aviation Analytics, Asset control and optimization for the Grid
Total	5.0	23.8%	6.0	

Source: Company Reports, J.P. Morgan Reports

Table 21: Global Industrials exposure to Industrial Software (2015E)

Company	% of group sales **
HON	2.5%
ROK	<10%
GE	5.0%
Siemens	3-4%
Schneider	~6%

Source: J.P. Morgan estimates. * Excludes industrial software sales accounted for in non automation divisions for Schneider. *** Excludes embedded software.

It's interesting that many of the products defined as "digital" today are also defined as "ecomagination" products, including Predix (discussed next). Looking many years back, we show a host of product examples below that might also have been considered "digital" in 2009 based on how the company is defining it today. This list is not exhaustive but points to more of a labeling exercise than entirely new sources of revenue.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 22: Similar Product Examples from GE Ecomagination Portfolio of 2009

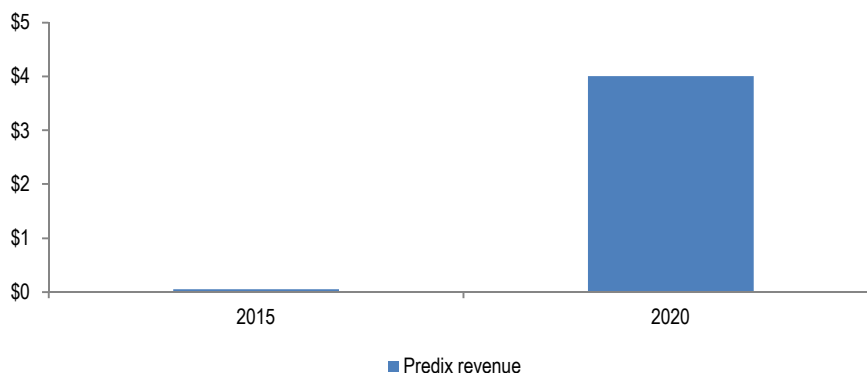
Segment	Products
Aviation	CFM56 Tech Insertion
Aviation	CFM56-3 Advanced Upgrade
Power	OpFlex Turndown technology
Power	Field Force Automation Software System
Power	Kn 3™ Optimization Software for Power Plants
Healthcare	Centricity Enterprise Electronic Medical Records
Healthcare	Digital Mammography
Transportation	Trip Optimizer Software

Source: Company reports.

The much discussed Predix was officially launched this year as a third-party software solution, offering Internet-of-Things (IoT) related services as a SaaS model. They offer customers the underlying IT infrastructure, an analytics engine, and a few pre-designed apps to connect their own devices and analyze data from their equipment, with opportunity for others to develop their own apps suited to their needs. Companies here benefit from enterprise class analytics to help make sense of all the equipment/operations data and variable cost structure in their factories/plants. Predix is not restricted to customers that own/procure GE's equipment or other services, meaning this could possibly become a new revenue stream once the platform is more mature. We think Predix could become a sustainable revenue offering for GE, but it is early days, and currently close to zero in revenue. Management expects this business to grow to \$4B in revenue by 2020.

Figure 33: Predix Revenue Expectations

In billions



Source: Company reports.

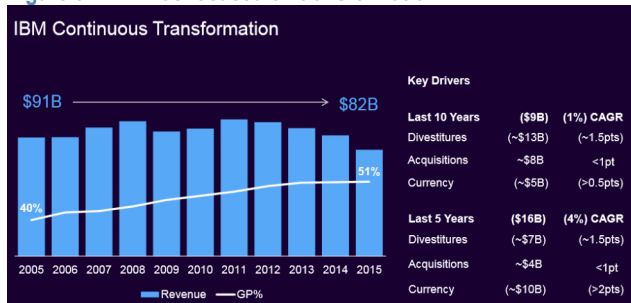
IBM is a good example of how this transition is sometimes $2-1 = 0.5$. IBM has been undergoing a "transformation" for some time, prying out the less well positioned equipment business to focus more on software/solutions. Here, what we have seen is that during this transformation, the company has delivered gains in key areas of focus, however, it is also undergoing turnover underneath the surface which is costing them significantly when it comes to restructuring that, as per the CEO's comments is not a 1 for 1 payback, with a stock multiple that has gone from ~12.5x earlier this cycle (and mid teens last cycle) to ~10.5x now. In the end, these types of transitions have a cost, and even a renowned tech giant like IBM is not necessarily seeing outsized benefits in results, or stock price for that matter.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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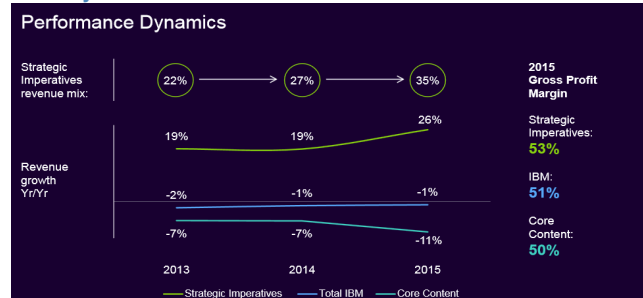
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Figure 34: IBM has focused on transformation...



Source: Company reports. Used with Permission

Figure 35: ...but good execution on strategic imperatives has been offset by core content declines...



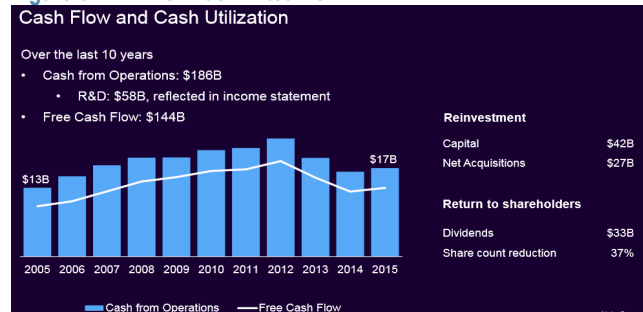
Source: Company reports. Used with Permission

Figure 36: ...and strategic imperatives have required investments...



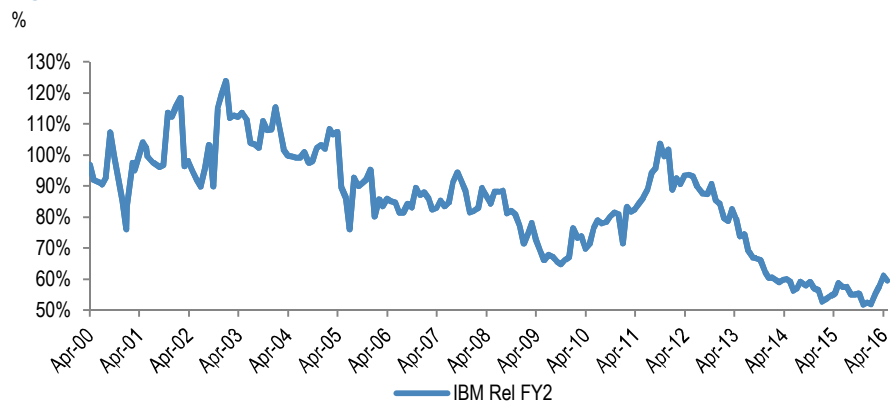
Source: Company reports. Used with Permission

Figure 37: ...which has limited FCF



Source: Company reports. Used with Permission

Figure 38: IBM Rel FY2 PE vs S&P 500



Source: Bloomberg

The company has also pointed out that this type of transformation requires significant investment, and they have spent around \$1B per year on workforce rebalancing over the past few years (~3% of sales). We paraphrase here some comments the company's CEO made during its Investor Day that underscore this point.

- "On savings, we expect that we'll reinvest a lot of the savings as we start to realize them...this is not about capacity reduction; it's actually about moving into these new areas where we see new opportunities."

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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- “On restructuring...it really is about shifting the work force from a set of skills that have value in the marketplace today to a new set of skills where we’re trying to build new businesses. The minority of the charge, if you will, is for reductions in usable capacity. The bulk of this is to get new set of skills.”
- “We think about our ability to acquire skills. In many of these sectors, we will hire them as quickly as the world can create them. We hired 1,000 security experts last year and quite frankly, if world created 2,000 of the caliber and the kind of talent we needed, we would've hired 2,000. But the world creates these skills at a certain rate and we'll hire them as aggressively as we can. We have some limits in terms of how do we put them to work and where's the demand and does that all match up, but we'll hire people as aggressively as we can as we build these businesses out. We are relying on some pretty unique talents in some these businesses.”

For GE, the company has about 20K software engineers (we estimated cost of \$100K per employee), and they hired 2,000 in the past 24 months. They are planning to get rid of 7,000 contractors and hire back 3,000 employees to in-source work they had previously given away to third parties. These comments lend support to our assertion that significant investment is required to undertake these initiatives, and may help to explain why all of the restructuring benefit is not making its way into net savings numbers at GE.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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“A Long Time Ago, In A Galaxy Far Far Away...”

A Timeline on Transformation

The focus from the Bulls is on transformation, a story we believe started in Fall of 2013 with a new CFO and Phase II of the GECS liquidation, two and half years ago that seems like it was altogether another time. In a nutshell, there was a sense of a positive change from the prior behavior of over-promise/under-deliver, which saw earnings revisions of ~10% per year for 15 years, as we have highlighted consistently. There is still lots to play out, but with the stock having moved, Bulls likely feel validated and point to a management that is executing. While we run through the operating results in more detail moving through the report, we start by taking a look back at what has transpired over the past two years, the various big and visible actions, and ultimate results of those actions in an effort to baseline where we stand today on credibility. We view the start of the story as the GECS investor meeting in November of 2013 where the company announced the SYF share exchange, along with a target to lower SG&A, part of the 17% ‘segment margin’ target (by 2016), while promising to grow earnings through the exchange (’15) with 10%+ industrial segment profit growth on ~\$4B in cumulative restructuring expense. The table below lists what we view as the “major actions”, and status of each as we stand today, showing the performance has been mixed, with a higher share count and weak value on SYF, misses on SG&A, a decline in EPS, a weaker than expected profit CAGR despite \$1B in higher restructuring. The bottom line is that based purely on execution around promises, the results on their own don't show a dramatic change from a credibility perspective.

Table 23: Timeline on Transformation

	Target	Current Tracking/Actual
SYF	9-9.5B 2015 ending share count	9.5B
SGA	12.0%	12.8%
ALO Deal (EBITDA Multiple)	7.9x	19.8x
Restructuring (\$mm)	4000	5200
Gross Margin (50bps/year)	Up 50bs/y from 27% in 2013	Went to 50bps+ from 26.5% in '14, beating that in '15
Industrial Segment Profit (2016E)	Prior JPMe \$19.5B	Current JPMe \$18B
Industrial Segment Margin	~17%	~17-17.5% ex-Alstom in 2016E (15.5-16% including Alstom)
Profit Growth	10%+ in '14/'15	9.5%/2.0% in '14/'15 (ex-Alstom)
EPS Growth in '13-'16	\$1.75 (2016 EPS)	\$1.50 (2016 EPS), or \$1.65 normalized for 2018 share count
GECS Wind Down Cash Dividend	\$35B	Modestly behind plan here

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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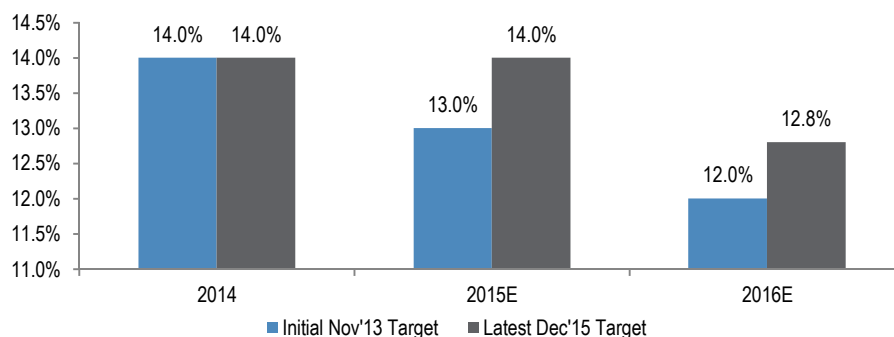
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Announcement of SYF Split-off and New Industrial SG&A Target of 12% by 2016

Nov 2013 meeting – SYF/SGA

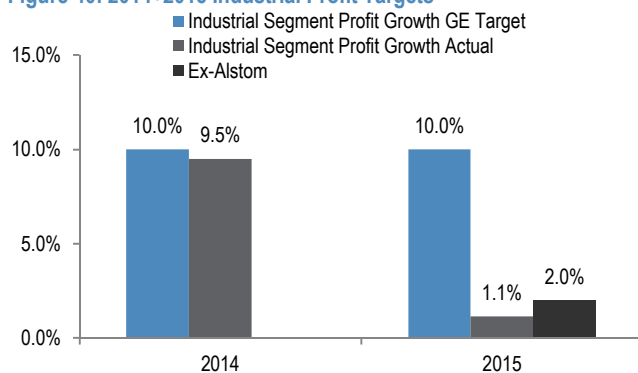
A new CFO with lots of promise, but ultimate results that are mixed. First, was the announced share exchange of SYF, driving shares outstanding to 9-9.5B, as part of the then target to get GECS to 30% of earnings. Additionally, this is where they gave a target to reduce SG&A to 12% by 2016. SYF went off, and share count went down to 9.5 B, the high end of that range, with an ultimate net valuation, including the \$4B capital raise that was given to SYF shareholders of 9.2x EPS. Meanwhile, SG&A is coming up light of the target, as we discuss in more detail below, with 2016 now expected to be ~12.8% versus the 12% target. Lastly, they also promised to grow EPS in '14 and '15 as they repositioned GE Capital, with Industrial segment profit up “++” or >10%. Ultimately, Industrial profits are up ~5% CAGR in '14/'15 (up 10% in '14, up LSD % in '15), and earnings have not grown (obviously with GECS deal). As part of this equation, they talked to \$1-1.5 B of restructuring in '14, essentially uncovered by gains, which ultimately was \$1.5B, and a step down in restructuring in '15, which ultimately came in at \$1.7B, though with \$1.5B in gains.

Figure 39: SG&A/Sales Has Come in Worse Than Initial Targets



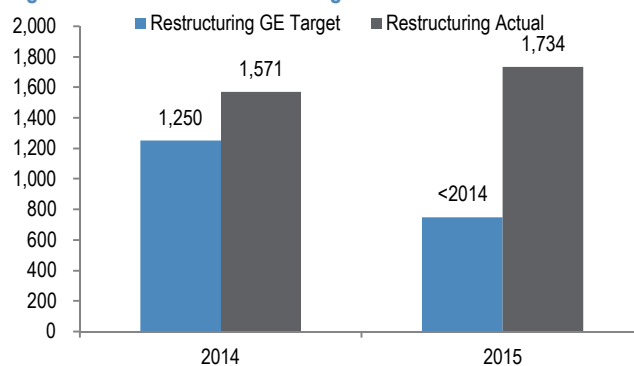
Source: Company reports and J.P. Morgan estimates.

Figure 40: 2014+2015 Industrial Profit Targets



Source: Company reports and J.P. Morgan estimates.

Figure 41: 2014+2015 Restructuring



Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Reaffirmed the 17% 2016 Margin target (which they have met ex-ALO by 2015 itself)

Total Cash Potential of \$90B from 2014-2016

\$0.04-0.05 accretion from ALO in year 1, \$0.08-0.10 in 2016 (tracking at \$0.05)

Multiple of 7.9x trailing EBITDA, which came in at ~17x trailing FY15 EBITDA

Event focused on Software Initiative.

Talked about \$4-5B of predix enabled revenue by 2017. No mention of an overall 'Digital' or 'Software' revenue

ALO accretion cut to \$0.06-0.09 for 2016

New '15-16 capital allocation target of \$76B

\$1.75 midpoint in 2015 EPS Guidance

Dec 2013 Annual Investor Meeting

They reaffirmed the 17% operating margin target, which was hit in 2015 (ex-Alstom) – note GE now includes 'adjusted' corporate expense when referring to the latest margin targets which stands at ~14-14.5% (inc Alstom) for 2016, with 16%+ by 2018. Other key targets here were doubling revenues in China for Healthcare, Aviation, Power/Water and Oil/Gas by 2020 (not likely to happen) and \$50 B in orders from Resource Rich regions by 2015 (Resource rich orders came in at ~\$31B in 2015). Lastly, they gave a target for total cash of \$90B from 2014-2016, or ~\$80B excluding GECS dividends, which, adjusting for dynamics around the GECS transition, is now tracking at ~\$83B or ~\$77B excluding divestitures (note these also include ~\$7.5B in debt raised over '14-'15).

April 2014 ALO Deal

Here the key tenets were \$0.04-0.05 accretion in year one and \$0.08-0.10 of accretion in '16, at a headline multiple of 7.9x EBITDA based on an EV of \$13.5B (so, \$1.7B in EBITDA) – the EV included \$3.4B of net cash. Keys here were \$1.2B in synergies by year 5 with \$300mm in year one, costing \$900mm to achieve. This was based on financials of \$20B in revenues, and \$1.3B in EBIT, a 6% margin. We walk through our more in depth take on ALO further down in this report, but just looking at the numbers, everything is generally more negative here including baseline EBITDA and cash generation which has impacted the purchase price, with an ultimate multiple of ~17x (FY end Mar'15)

October 2014 Minds/Machines Event

This is where the IoT platform began to gain traction. Not much provided that changed the long term equation on numbers, though the company did clarify its SG&A targets showing an expectation for 13% in '15, which they missed. They also provided a new number on restructuring for '12-'14 of ~\$4.3B, suggesting \$1.4B in '14 versus the prior \$1-1.5B target (ultimately was \$1.6B). On growth, they guided to \$4-5B of Digital solutions being Predix enabled by 2017 from \$0.8B in '13. 2015 is currently tracking at ~\$2.5B (50% of Digital) with a 2017 target of ~\$5.5B.

December 2014 Annual Investor Meeting

ALO accretion targets were maintained at \$0.06-0.09 in '16. Here they also introduced their target for gross margins, to be up 50 bps annually from the 27% in '13, while reaffirming again the 12% SG&A target. They also gave a new target for capital allocation for '15-'16 that included \$76B in cash available (~\$73B excluding GECS dividends), converting to \$40B in dividends and SYF related share exchange which was on track to deliver 700mm shares in exchange. Ultimately, this is coming in at ~\$70B, excluding the GECS divestitures. Lastly, they provided thoughts on '16 suggesting that it would grow versus the ~\$1.75 guidance for '15. Obviously, that will not happen, with consensus EPS standing at \$1.50 (~\$1.60-\$1.65 normalized for share count post GECS divestitures).

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Aggressive Wind-down of GE Capital Announced.

\$35B in asset sales over 3 years to be deployed into buybacks

2018 ending share count of 8-8.5B

Close to \$2 in EPS in '18

April 2015 GECS Asset Sale Announcements

Announced shrinkage to \$90B in core verticals generating \$1.5B of net income (excluding \$1B in non-operating carry costs for excess debt and \$300mm in preferred costs), returning \$35B by '18. The plan highlighted delivering \$90B to shareholders by '18. Management talked about future GE Capital being valued at \$20B on the \$14B of tangible book and the modest amount of net income.

Management also updated SYF dynamics talking to 700-800mm in buyback at standing prices for SYF. They also provided a 2018 bridge that did not explicitly have a number but looked close to \$2 in EPS, under the assumption of an ending share count of 8-8.5B. Looking at the progress so far, we see the total capital raised from asset sales is tracking below plan, with ~80% of the total target announced but with only ~70% of the target capital raised so far. We also note that the ENI for assets has come down by ~10% on average since Dec '14, which in our view could ultimately result in slightly lower than the \$35B targeted capital raise.

Table 24: Asset Disposal Target vs Completed

In billions of US\$

	Target Disposition Plan (Based on 2014 Ending ENI)	Deals Completed	Capital Raise Target	Capital Raised
Real Estate	35	35		
CLL	130	116		
Consumer	37	14		
Total	202	166	35	25
% completed		82%		72%

Source: Company reports and J.P. Morgan estimates.

ALO accretion target of \$0.15-0.20 for 2018 provided with \$3B in synergies by 2020

Provided an EPS bridge that indicated \$2+ in 2018 EPS

May 2015 EPG

Here, while beginning to come off of the near term performance at ALO, noting markets are “challenging”, they upped the 5 year synergy target to \$3B, providing '16 accretion of \$0.06-0.09 and '18 accretion of \$0.15-0.20. They also provided a goal for Equipment margins to go from 5% to something above 5%. They gave a number for software revenue of \$5B in '15 to go to \$8B by '17. No change to the operating margin target but they talked to an industrial segment gross margin ongoing goal of 50bps/yr, but off of a base of 26.5% in '14. They reaffirmed the 12% goal for SG&A, noting \$5B+ in restructuring in '13-'15. They also have an official target to get cash conversion back to 95% over 3 years. They clarified the 2018 EPS bridge, providing a “++” at the end versus the “+” in April, and built from \$1.30 of EPS adding \$0.35 from \$0.10 of SYF and \$0.25 of GECS buyback, then \$0.15-0.20 of ALO accretion with “+” from organic growth, margins, FCF and corp cost.

Table 25: EPG 2015 Targets vs Current

	EPG 2015 Target	Latest
Alstom Accretion	\$0.06-0.09 in 2016, \$0.15-0.20 in 2018	\$0.05 in 2015, \$0.15-0.20 in 2018
Equipment Margin	5%+	5%+
Software Revenue	\$5B in '15, \$8B in '17	Unchanged. Also sees \$10B in 2020 + \$4B in predix + \$1B in productivity
Gross Margin Expansion	50bps/yr off of 26.5% in '14	50bps/yr
Cash Conversion	95% over 3 years	~85% in '15, ~87-88% in '16

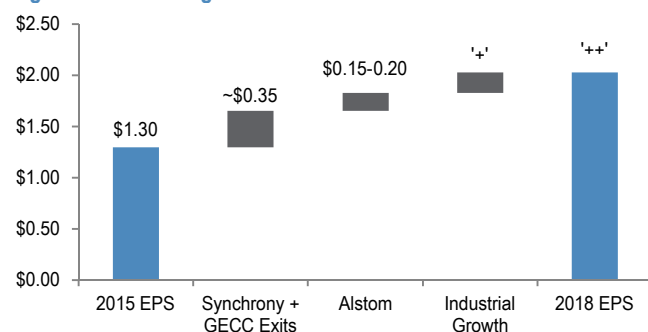
Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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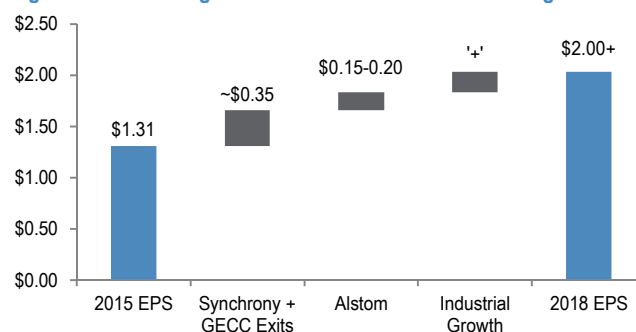
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Figure 42: 2018 Bridge Presented at EPG



Source: Company reports and J.P. Morgan estimates.

Figure 43: 2018 Bridge Presented at 2016 Outlook Meeting



Source: Company reports and J.P. Morgan estimates.

**Cut 2016 ALO accretion to \$0.05.
Maintained long-term accretion
targets**

Dec 2015 Alstom Meeting

They took down Alstom accretion to \$0.05 for 2016 from \$0.05-0.08 prior and provided detailed color on yearly trajectory of cost actions and related synergies, calling for \$3B in cost synergies by 2020 and ~\$0.6B upside from growth synergies. Final price of the acquisition was ~\$10.3B with 12 month EBITDA (ending Sept-15) close to breakeven vs initial valuation of ~7.9x (based on LTM Mar-13).

Table 26: Alstom Deal Metrics: Initial vs Final

	April '14	July '14 (After Divestitures)	May '15 (After Divestitures)	Sept '15 (After Divestitures)	Current (After Divestitures)
High Level Metrics					
'16 EPS accretion	0.08-0.10	0.06-0.09	0.06-0.09	0.05-0.08	0.05
'18 EPS accretion			0.15-0.20	0.15-0.20	0.15-0.20
IRR	high teens	high teens	'strong'		15%+
EV	13,500	10,100		9,500	10,300
EBITDA (FY end, Mar)	1,709	1,354		600	600
EBITDA (LTM Sep'15)					11
EV/EBITDA FY'15	7.9	7.5		15.8	17.2
EV/EBITDA FY'15 PF synergies	4.6	4.0		2.6	2.9

Source: Company reports and J.P. Morgan estimates.

Dec 2015 Annual Outlook Meeting

2016 EPS of ~\$1.45-1.55 was slightly below the street (~\$1.52) at mid-point. This was based on core margin expansion off of organic growth of 2-4%, adjusted corp costs of \$2-2.2B, Alstom accretion of \$0.05 and restructuring offsetting all gains. On SG&A, they expect 2016 to end at 12.8% ex-ALO, down ~100bps y/y with long-term goal of 12%. They see total margins (segment + adjusted corp) down 50-100bps y/y in 2016 to 14-14.5% including Alstom (100-150bps negative impact from ALO), with 2018 target of 16%+. They continue to see 50bps/y gross margin expansion with corp expense <2% over the long-term. On Digital revenues, they see '++' growth in 2016 off of the \$5B 2015 base with ~\$500mm in productivity. They also gave an industrial *adjusted* FCF conversion target of 200-300bps Y/Y expansion in 2016 (adjusted FCF excludes ALO, but also now includes proceeds from P&E dispositions). Finally, they gave a new target for capital allocation of ~\$145B from '15-'18, with ~\$20B incremental leverage opportunity (~1x Industrial EBITDA),

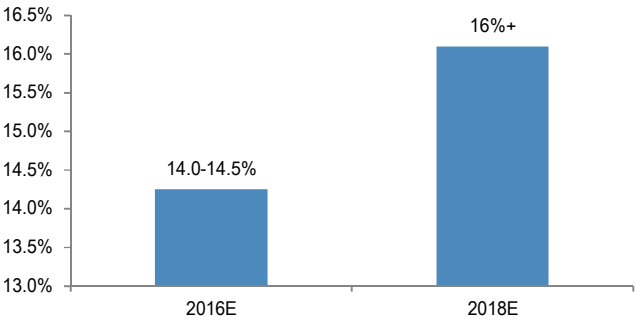
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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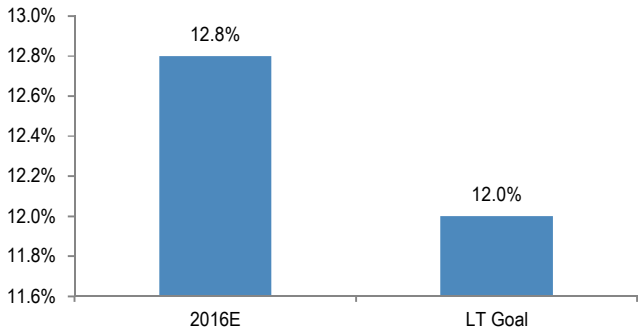
which includes ~\$55B from GECS asset sales + Synchrony exchange and the rest from Industrial CFOA, parent cash and dispositions.

Figure 44: Industrial Margin Target



Source: Company reports and J.P. Morgan estimates.

Figure 45: SG&A Target



Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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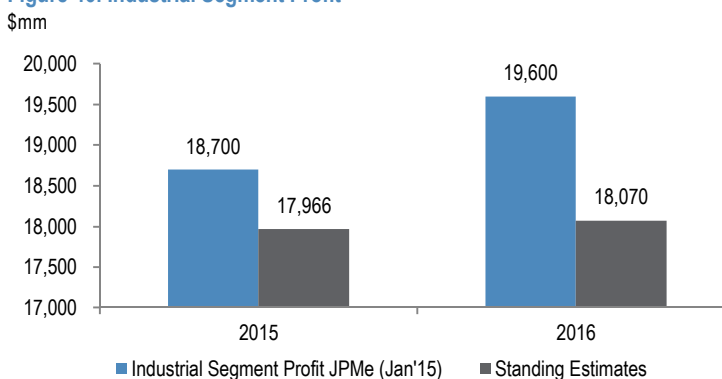
Where Were We Wrong?

Prior to going on restriction, we penned a [piece](#) about how GE was worth a look at the then level of \$25. There were several aspects that kept us on the sidelines, though we vetted the story in an effort to figure out where we could be wrong. Our thesis was that GE stock had underperformed due to lagging performance of GE Industrial since the bottom in '09 (which was obviously more driven by risk at GECS).

**Our Industrial Profit Numbers
Were Below Consensus But Too
High**

We had provided an outlook for '15/'16 profits that was below consensus at the time, coming in at \$18.7B/\$19.6B versus what we see now as \$18B/\$18.1B. This suggests that the Street was even more wrong on the upside, and the 1% profit growth in '15 came in at the low end of the EE/MI sector. So, if it's not the numbers, what drove the recent move?

Figure 46: Industrial Segment Profit

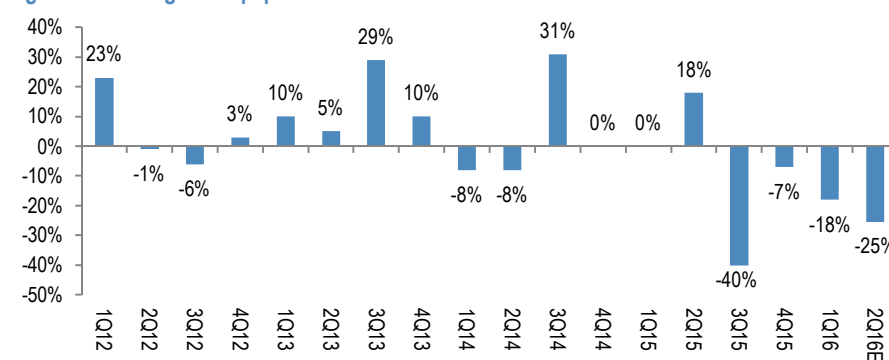


Source: Company Reports, J.P. Morgan Estimates. Note: 2015 is Actual reported vs Jan'15 estimate

Bull Point #1: GE as a “safety” stock

This is most likely an element. While revisions have been bad, they are no worse than the group, and the 1Q result was not a “miss”. This said, it's important to keep in mind that consensus continues to move lower for the year on segment profits, and 1Q order trends down ~7% organic (equipment down ~18%) did not exactly show “immunity”. As we will discuss, we see differences in performance this time versus last that play against the sustainability of this Bull case.

Figure 47: GE Organic Equipment Order Growth



Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

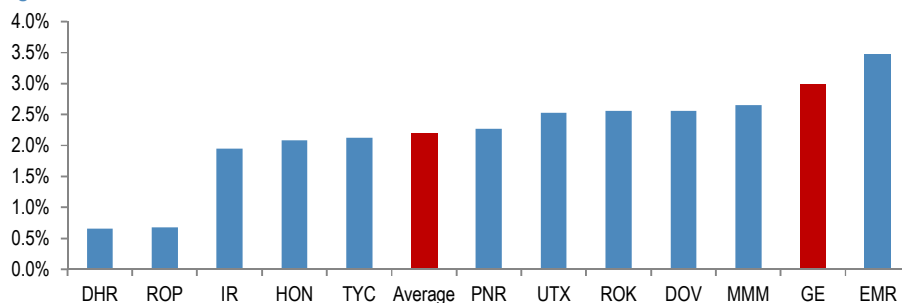
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Bull Point #2: Good dividend yield

There is no change in this point other than the fact that management is not talking about raising the dividend in the near term, and, without GECS dividend support, the payout ratio on FCF is highest in the group (~2x the group average).

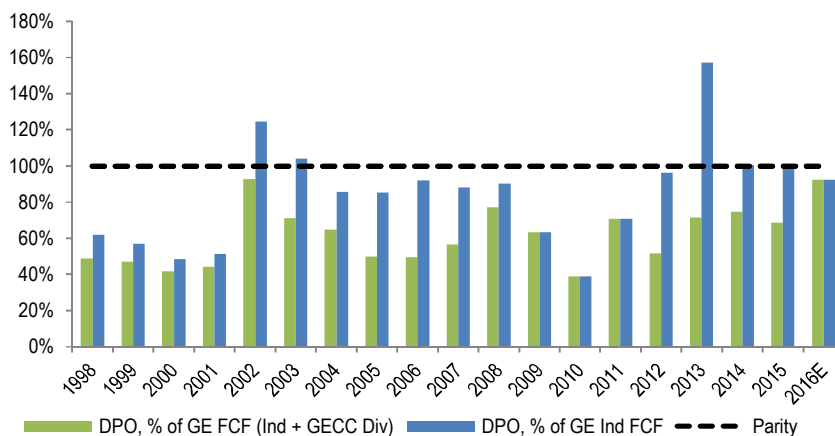
Figure 48: GE Dividend Yield



Source: Company reports and J.P. Morgan estimates.

Figure 49: GE Common Stock Dividend Payout Ratio

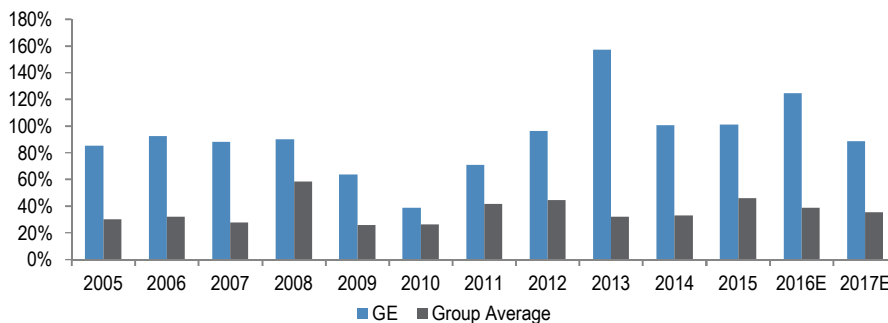
Dividends % of FCF



Source: Company reports, and JPMorgan estimates.

Figure 50: GE Common Stock Dividend Payout Ratio vs Group

Dividends % of FCF



Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

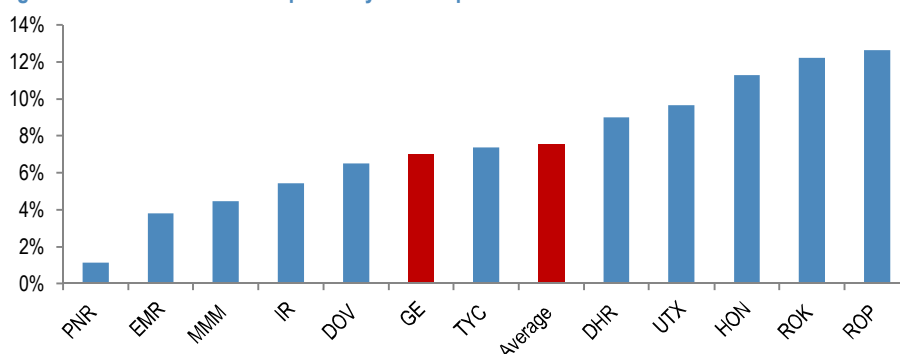
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Bull Point #3: Balance sheet optionality

As recent as this past Fall, some still talked about upside capital deployment/capital return from GECS. It's abundantly clear that this is NOT the case, and the \$35B of promised capital extraction is the max, especially since the left over \$1.5B of apparent GECS earnings from the Verticals excludes cash calls from the debt overhang and preferred payments that reduce the reported net income to ~\$100-200mm. Management has highlighted the extra \$20B in optionality, but with all available cash going to the dividend, an extra 7% of market cap from leverage, is not differentiated vs the group.

Figure 51: GE Balance Sheet Optionality vs Group



Source: J.P. Morgan estimates.

Bull Point #4: Breakup would add value

This is one of the things we have gotten wrong, but not because of our call on GECS. Our SOTP from early '14 had given GECS, x-SYF a \$5 value, which actually looks high now, with the \$35B taken off the table on GECS (\$3-3.5 in value), and a left over Verticals value of ~\$1.5. We had pegged the '16 EPS of 15.2x as fair (16x for GE Industrial, at parity to the group back then), though now see a value of ~20x on '17 Industrial EPS, a ~20%+ premium to the group on P/E (or ~15% when normalized for the 2018 share count), which is much higher on FCF (discussed in detail in the valuation section of the note). This premium, despite rudimentary profit growth that is not sustainable beyond '18 barring capital deployment, which again is not differentiated vs the group, is the surprise.

Specifically, on P/FCF, we note that 2017 is not a normalized year for FCF for a few reasons: 1) Our 2017 estimates includes \$2.1B in pension contributions (as per the 10-K filings) which we assume goes to a \$1B run rate from 2018 onwards, 2) we assume half of the cash related to 2016 restructuring actions flows through into 2017 given a lot of actions Europe Alstom related as well as other actions that are governed by non-US laws. We believe our 2018 Industrial FCF conversion of ~80-85% is a more normalized run rate and applying this rate to our 2017 EPS estimate would imply a P/FCF premium of ~55% vs the ~120% in the table below, a EV/FCF premium of ~130% vs the ~175% below, and a weighted average of ~10-15% vs the ~20% below, all still expensive vs the group.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 27: Valuation on Different Metrics

% premium/discount on 2017

Premium/Discount	Reported EPS Consensus Approach (2017)	GAAP EPS (including amortization, restructuring)	Cash EPS (normalized to exclude amortization on reported EPS)	Adjusted GAAP EPS with BS Upside (including amortization, restructuring, normalized for pension)	Reported Balance Sheet Adjusted P/E	Reported Pension Adjusted P/E	P/FCF	EV/EBITDA
DHR	107%	119%	114%	115%	105%	106%	107%	121%
DOV	106%	103%	95%	103%	106%	105%	88%	91%
EMR	97%	95%	95%	95%	100%	95%	99%	88%
GE*	111%	107%	108%	107%	106%	104%	223%	110%
HON	94%	91%	96%	96%	91%	102%	105%	96%
IR	86%	84%	83%	82%	87%	84%	85%	87%
MMM	118%	115%	122%	123%	122%	122%	122%	112%
PNR	83%	95%	88%	96%	88%	80%	87%	110%
ROK	116%	112%	119%	106%	110%	114%	105%	103%
ROP	145%	141%	130%	131%	137%	142%	121%	129%
TYC	104%	101%	103%	101%	104%	104%	114%	105%
UTX	88%	86%	86%	84%	87%	87%	87%	86%

Source: Bloomberg, Company reports, J.P. Morgan estimates. For GE we use Industrial EV for EV/EBITDA

Table 28: Valuation on Key Metrics Chosen For Weighted Average Calculation

% premium/discount on 2017

Premium/Discount	Adjusted GAAP EPS (including amortization, restructuring, normalized for pension)	Pension Adjusted EBITDA	EV/FCF (adjusted for Interest)	Weighted
DHR	118%	120%	109%	117%
DOV	102%	91%	88%	95%
EMR	92%	86%	101%	92%
GE*	106%	109%	175%	121%
HON	100%	104%	99%	101%
IR	82%	85%	85%	84%
MMM	119%	116%	119%	118%
PNR	91%	106%	97%	98%
ROK	111%	103%	88%	103%
ROP	138%	127%	114%	129%
TYC	101%	104%	106%	103%
UTX	85%	86%	107%	90%
Factor Model	40%	40%	20%	

Source: Bloomberg, Company reports, J.P. Morgan estimates. For GE we use Industrial EV and EBITDA for EV/EBITDA

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

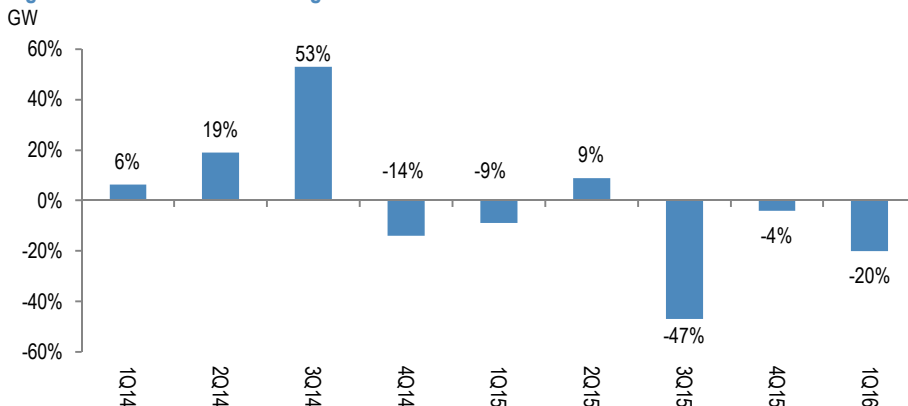
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Bull Point #5: Fundamental upside in the HDGT market

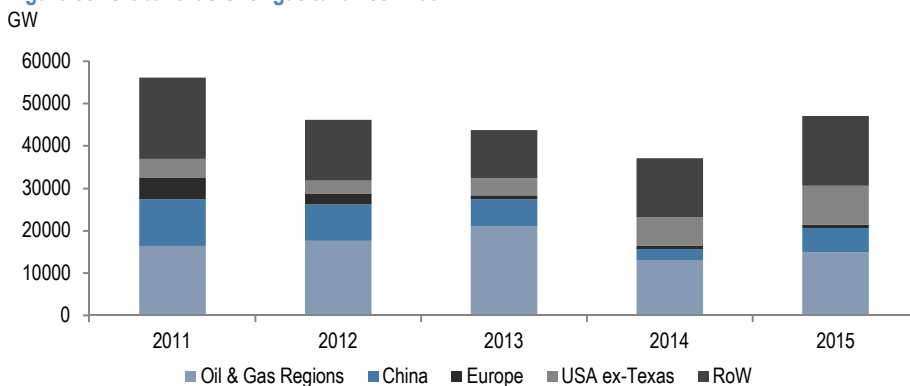
This is happening in the US today, with US orders up to 20% of the industry total from the 5% at the bottom several years ago. Unfortunately, the global market is down, leading to total orders that are more flat. This is reflected in GE resource rich order dynamics which decelerated in 2015 and into 1Q16.

Figure 52: GE Resource Rich Region Orders



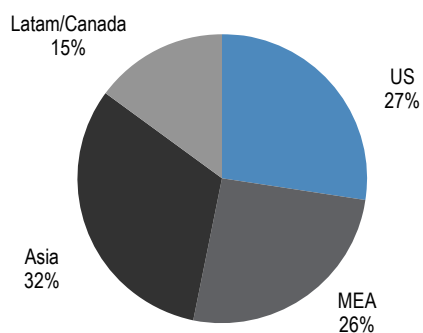
Source: Company Reports, JPMorgan estimates.

Figure 53: Global orders for gas turbines >100MW



Source: McCoy, JPMorgan estimates.

Figure 54: GE 2015 Orders Split By Region



Source: McCoy, J.P. Morgan Estimates

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Bull Point #6: ALO a game changer

As per our analysis in this note, ALO is underperforming as it comes into the fold, and comments from Siemens CEO suggest the transfer of technology to Ansaldo means the capacity that went away with this deal is re-emerging quickly, while the sale of the PSM business for a low multiple means the core services franchise on F-frames will remain competitive. We consider ALO to be weaker than expected.

Bull Point #7: Strong industrial EPS growth

Given GECS was a cash generative asset, and contributed to EPS, the proceeds towards the buyback that leverages the weak Industrial profit growth to EPS growth should not be discounted as sustainable. This is not “incremental” growth but an internal transfer of value to what should be a higher multiple earnings base, but the extent is overdone. The straight math here is to take the earnings of GECS and their value, then convert those earnings into Industrial, and put a higher multiple on them, which gets us to \$1-1.5 in incremental value, not the \$5 that ensued following the announcement.

Table 29: Incremental Value Created By GECS Asset Sales Announcement

GE Capital EPS 2018E (Prior to GECS April Announcement)	\$0.40
Multiple JPMe	12.5X
Value	\$5.00
GE Capital Verticals EPS 2018E (Post Announcement)	\$0.17
Multiple JPMe (Prior)	12.5X
Value GE Capital Vertical Assets	\$2.13
GE Capital EPS Moved to Industrial	\$0.25
Multiple JPMe for Industrial (Parity to Group)	17.0X
Value to Incremental Industrial EPS	\$4.25
Value	\$6.38
Difference	\$1.38

Source: J.P. Morgan Estimates

The recent move in the stock would suggest those incremental GE Industrial earnings lead to a revaluation of the complete Industrial base to a ~15% premium or a ~45% FCF premium on our estimates.

Table 30: Implied Value of New Industrial EPS

Current GE Share Price	\$30.48
GE Capital Value (JPMe)	\$2.13
Remainco Industrial	\$28.36
Industrial EPS (JPMe)	\$1.47
Multiple 2017E	19.3
Multiple 2017E (Normalized for 2018 share count)	18.6
% P/E Premium (Industrial)	13%
% FCF Premium (Overall)	46%

Source: J.P. Morgan Estimates

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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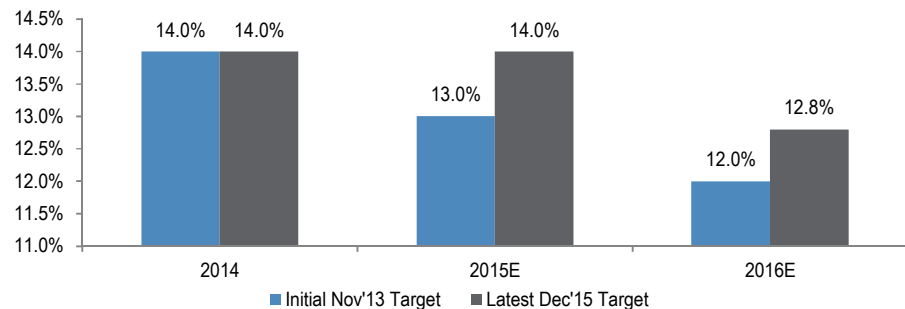
Bull Point #8: GE is “under-owned”

This argument also has some merit and clearly there was an element of a “long squeeze” in last year’s move. Still, a Bull case that revolves around fear of losing one’s job versus earnings and FCF fundamentals does not seem sustainable to us, and we therefore think this is temporary in nature. This had been "under-owned" for over a decade, and the stock was a laggard because of fundamental factors like a risky highly leveraged finco into the worst downturn in decades and negative earnings revisions and weaker than average growth on the Industrial side.

Margin Target Recap – Margin Execution Solid, But Margins Don't Necessarily Equal Earnings

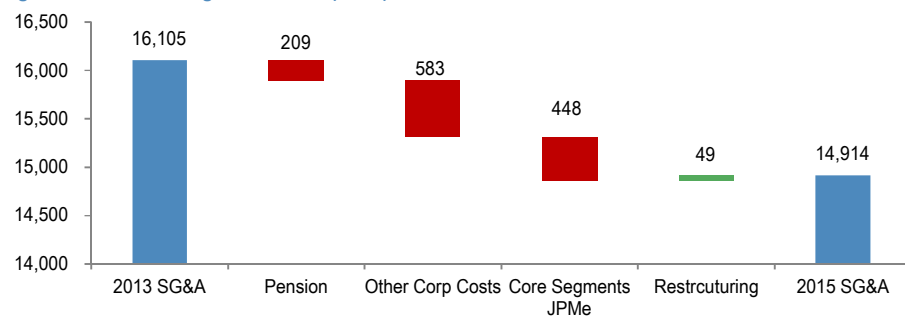
In late 2013, GE put forth two major targets related to margins and SG&A leverage: (1) Industrial margins x-corporate, which called for ~17% margin by 2016 vs ~15.7% in 2013, and 2) target for 12% SG&A/sales in 2016 versus 16% in 2013. Management executed well on both targets. First, Industrial margins x-corporate expanded ~50bps in 2014 followed by ~80bps in 2015 ex-Alstom, meaning they would have achieved this target a year ahead of plan. However, Alstom diluted margins by ~50bps in 2015 and will dilute margins by ~150bps in 2016. Therefore, the prior 17% margin goal has been stretched to beyond 2017, and at the Dec outlook meeting management set a new margin target that now includes 'adjusted' corporate (corporate ex-restructuring/gains), with ~14-14.5% expected in 2016 going to ~16% by 2018. We don't fault management here as delays in closing the Alstom deal not only delayed the synergy benefits but also hampered operations at the acquired business due to customer uncertainty - underlying operating margin is currently below breakeven level, down ~500bps since the acquisition announcement (we discuss this in more detail later in the report). Looking ahead, on an underlying basis we see Industrial margin expansion (incl Alstom and corporate) slowing down in 2016, down ~100bps y/y, and we discuss the moving parts later in the earnings outlook section. Second, on SG&A, we believe the 12% target had taken into account a significant benefit from pension related tailwinds (which do not flow into continuing ops), and management did see significant benefits in 2014, however this benefit was partially reversed in 2015. GE now targets SG&A/sales of ~12.8% by 2016 with 2015 staying flat vs 2014 (down 10bps ex-Alstom) after going down ~200bps y/y in 2014. Despite this, we believe management has done a good job taking costs out.

Figure 55: SG&A/Sales Has Come in Worse Than Initial Targets



Source: Company reports and J.P. Morgan estimates.

Figure 56: SG&A Bridge ex-Alstom (\$mm)



Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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We take a look back at recent margin performance and then dive into moving parts for next year and beyond using both a top down and bottom up approach.

A Look Back at the Margin Performance in 2014/2015

The bridge below shows the moving parts. The biggest contributors over these two years were simplification benefits (both in 2014 and 2015) and cost productivity (particularly in 2015), with value gap (price + raws) also adding ~70bps over this period. Key offsets were ongoing labor/wage inflation and mix.

Table 31: GE Industrial 2-Year Segment Margin Walk (2013-2015)

\$ millions except margin data

	Sales Walk	Profit Walk	Margin Walk
Start 2013	103,602	16,220	15.7%
Core	8,081	976	-0.4%
Price	475	475	0.4%
Volume	7,606	1,368	0.1%
Mix		(868)	-0.8%
Raws	0	325	0.3%
Acquisitions	1,861	(66)	-0.3%
FX	(4,748)	(775)	0.0%
Gross simplification benefits		1,850	1.7%
Other ongoing inflation		(1,100)	-1.0%
R&D		166	0.2%
Cost Productivity		370	0.3%
End 2015	108,796	17,966	16.5%

Source: Company data, J.P. Morgan estimates

Table 32: GE Industrial Annual Segment Margin Walk (2014)

\$ millions except margin data

	Sales Walk	Profit Walk	Margin Walk
Start 2013	103,602	16,220	15.7%
Mix		(978)	-0.9%
R&D		166	0.2%
Gains	0	0	0.0%
Value gap	100	300	0.3%
Acquisitions	505	127	0.0%
Core	5,695	1,029	0.1%
Gross simplification benefits		1,400	1.3%
Other ongoing inflation		(500)	-0.5%
Start 2014	109,902	17,764	16.2%

Source: Company data, J.P. Morgan estimates

Table 33: GE Industrial Annual Segment Margin Walk (2015)

\$ millions except margin data

	Sales Walk	Profit Walk	Margin Walk
Start 2014	109,726	17,764	16.2%
Mix		109	0.1%
R&D		0	0.0%
Cost Productivity		370	0.3%
Gains	0	0	0.0%
Value gap	375	500	0.4%
Acquisitions	1,356	(192)	-0.4%
FX	(4,748)	(775)	0.0%
Core	2,087	340	0.0%
Gross simplification benefits		450	0.4%
Other ongoing inflation		(600)	-0.6%
End 2015	108,796	17,966	16.5%

Source: Company data, J.P. Morgan estimates

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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One of the key items here is restructuring and simplification, charges for which totaled ~\$5.5B from 2013-2015, roughly \$1.8B/year for the last three years. Taken at face value, these actions should have resulted in \$3.5B in savings through to the bottom line or 300bps in margin gains. Overall, however, the company grew absolute segment profit by just \$2B over two years, even after a revenue increase of \$8.5-9B and ~\$800mm in value gap (price + raws). The walk below shows what we believe actually happened. First, not all of the cost takeout occurred at the segment level, as some savings came at corporate (Other Corporate Costs & Elims have come down ~\$500mm). Of note, excluding Alstom (which added ~60K to the 2015 ending headcount as reported in the 10-K), GE's headcount has come down by ~10% in 2015, with the Industrial headcount down ~5% from 2014 levels. The key cuts have taken place in Oil & Gas, which is down ~10-15% from 2014 levels, with slight reductions in Transportation and the legacy Power business as well. On Digital, the company has added 2,000 employees in San Ramon with another 3,000 coming.

Additionally, there is also 30-40bps of normal labor inflation annually that is not called out by the company in the operating framework but offsets the gross savings mix, driven primarily by Aviation (GEnx) and Power & Water (*as per old segmentation*, lower Aero-derivatives, strong Wind/GT shipments). Overall, we give credit where due as GE has executed solidly and despite mix headwinds, Industrial segment margins ex-Alstom ended at ~17%, a year ahead of targets. However, including Alstom this goes to 16.5% which likely gets worse in 2016 (decline y/y) as the low margin Alstom business severely impacts overall mix. Next, we discuss margin moving parts in our forecasts, taking a top down as well as bottom up approach.

Table 34: Difference between realized and implied savings from restructuring actions

	2014+2015
Implied savings from restructuring	3,345
<u>Less: Other corporate costs reduction</u>	<u>583</u>
Implied segment operating savings	2,761
<u>Less: Simplification savings reported (incl Cost Productivity)</u>	<u>2,220</u>
Difference	542

Source: Company reports and J.P. Morgan estimates.

Another key item driving margin expansion is the benefit from recent LTSA contract adjustments, most prominent in the Power and Aviation segments, in our view, given the nature of long-term contractual agreements in these segments. These mostly non-cash contract adjustments contributed ~\$1.4B to earnings in 2015 compared to ~\$1B in 2014 and ~\$300mm in 2013. Within the bridges, we think, all these benefits are embedded within gross margins (primarily cost productivity and value gap buckets).

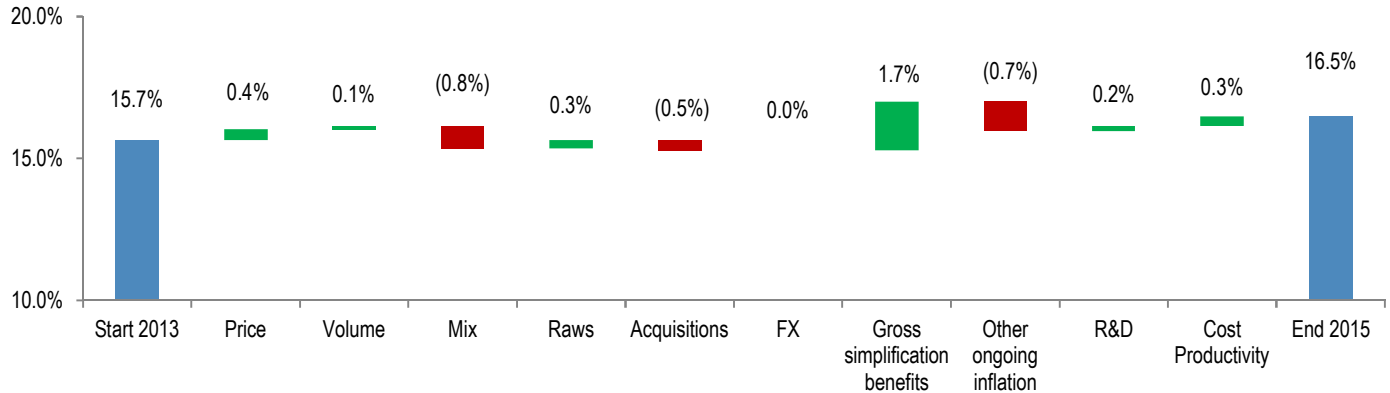
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 57: GE 2-Yr Industrial Segment Margin Walk – Gross Simplification Saves Offset by Inflation

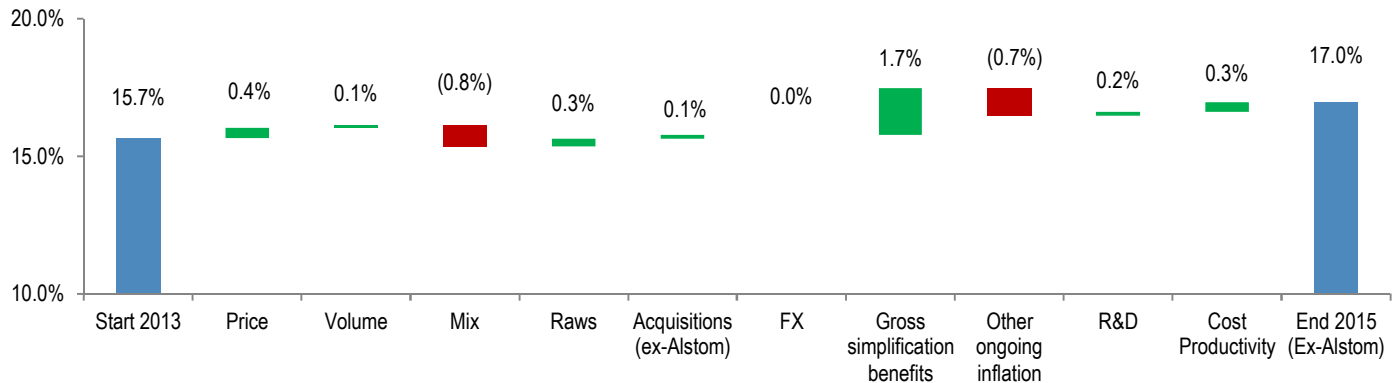
Industrial segment margin



Source: Company reports, J.P. Morgan estimates

Figure 58: GE 2-Yr Industrial Segment Margin Walk – Gross Simplification Saves Offset by Inflation (ex-Alstom)

Industrial segment margin



Source: Company reports, J.P. Morgan estimates

However, Margins Don't Equal Earnings...

As we highlighted GE's margin performance has met expectations in the recent past, and has actually exceeded prior long-term targets. However, despite this beat, ultimate earnings has been disappointing, driven by slightly weaker organic revenue growth and FX while EPS was helped by below the line items such as tax rate and lower adjusted corporate expense. For 2016 tough driven by the lower 2015 profit base, our 2016 assumptions are tracking ~\$1.5B below or ~\$0.15, but this is offset by lower adjusted corporate expense, lower share count and lower tax rate. Looking at FCF as well, expectations are now tracking ~15% lower than one year ago for 2016. Net-net, the point is that key metrics like industrial segment profit and FCF haven't met initial commitments in 2015 and 2016.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 35: Original 2015/2016 Expectations Last Year (Pre-April' 2015) vs Current Estimates

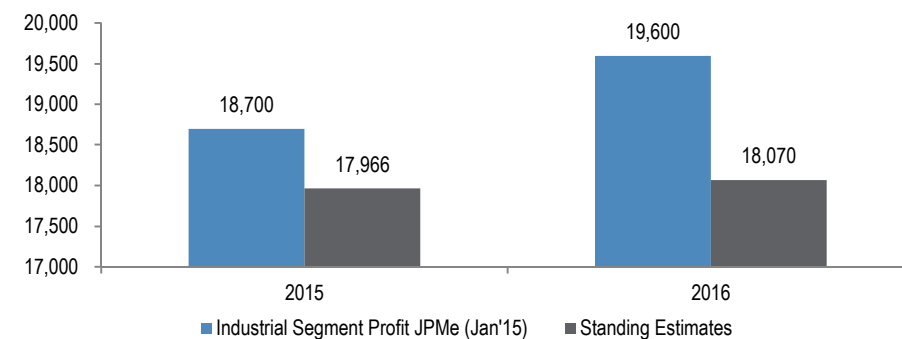
\$mm

	2015 JPMe Prior	2015 Guidance	2015 Actual	2016 JPMe Prior	2016 Guidance	2016 JPMe Current
Organic Growth	4%	2-5%	3%	0%	2-4%	2%
Segment Profit JPMe (April'2015) Y/Y	5%	'+/++'	1%	19,616	19,000+	18,070
Segment Profit ex-Alstom JPMe (April'2015) Y/Y		'+'	2%	18,411		17,421
Segment Margins (April'2015)	16% (down 20bps y/y)	Up Y/Y	16.5% (up 30bp y/y)	16.3%	15.8%	15.5%
Segment Margins ex-Alstom (April'2015)	16.4% (up 40bps y/y)	Up Y/Y	17.0% (up 80bp y/y)	16.9%	17.1%	17.0%
Adjusted Corporate	(2,412)	(2,400)	(2,107)	(2,392)	(2,100)	(1,901)
Restructuring + Gains (EPS Impact)	\$0.00	\$0.00	(\$0.01)	\$0.00	\$0.00	\$0.00
Tax Rate (ex-Alstom Benefit for 2015, 2016 is all-in)	19.0%	19.0%	16.6%	19.0%	17.0%	16.9%
Industrial EPS	\$1.12	\$1.15	\$1.14	\$1.30	\$1.35	\$1.31
FCF (Industrial CFOA - Gross Capex, ex-ALO)	8,192	8,250	8,268	9,475	8,500	8,457

Source: J.P. Morgan Estimates and Company Reports

Figure 59: Industrial Segment Profit

\$mm



Source: Company Reports, J.P. Morgan Estimates. Note: 2015 is Actual reported vs Jan'15 estimate

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

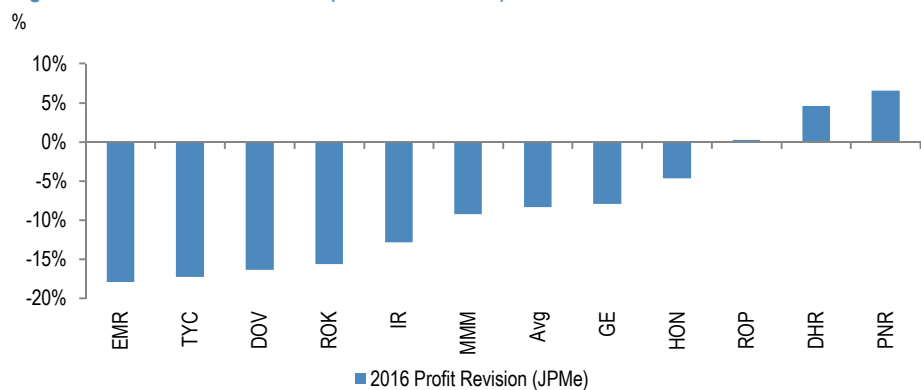
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1Q16 Earnings Wrap, 2Q Outlook: Weaker Than Expected Core

From the high level stock story dynamics, we now move into the nitty gritty moving parts around the numbers. We believe GE's Industrial businesses delivered an in-line 1Q, no different than peers with a beat to consensus driven by GE Capital. Among the segments, profit growth was solid in Aviation (helped by mix of strong services growth) and Renewables (strong leverage on organic growth). On the other hand, Power is seeing headwinds from the H-launch, and Oil & Gas is starting to get hit hard on the bottom line, driven by volume deleveraging and price. Equipment order growth was weak in the quarter, driven by a 70% drop in Oil & Gas, and we think 2Q could be worse (detailed in this section). In addition, looking at Street EPS vs pre-1Q estimates and eliminating the impact of gains/restructuring, segment profits have moved lower post results. Based on the 1Q profile, our standing 2Q estimates (in-line with Street), historical seasonality, and factoring in lumpiness in Power turbine shipments, we see the 2H ramp to achieve the full year target of \$19B+ as a stretch. We walk through all these moving parts below.

Figure 60: 2016E Profit Revisions (March '14 vs Now)



Source: Company reports and J.P. Morgan estimates

1Q Fundamentals: Solid Aviation and Renewables; GE Capital Upside Driven By Gains

Starting with the top line, GE Industrial organic growth started below the full year guide at -1%, but this was largely due to lumpiness of GT shipments (Power), excluding which organic sales were up ~3%. Aviation was solid driven by services (up 17% y/y). Renewables was strong, with shipments up ~30% (ex-ALO) driven by clarity around the PTC extension and easy prior year comps. Organic revenues at Renewables grew ~45% as the mix of new 2.0x products increased. Healthcare was also solid, with 6% organic growth, one of the strongest top line quarters in recent history, driven by Life Sciences which was up 13% y/y. On the negative side, Oil & Gas was weak as expected at down ~14% organic, while Transportation was down 20% organic, driven by a weak domestic market. All-in, the performance was mixed, with Aviation, Healthcare and Renewables tracking better than prior FY expectations, while Oil & Gas and Transportation came in below.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 36: GE Industrial 1Q16 Sales and Organic Growth

\$ millions except margin data

	1Q Sales	1Q Organic Growth
Power	5,204	-16%
Renewable Energy	1,669	45%
Oil & Gas	3,314	-14%
Energy Connection	2,260	-6%
Aviation	6,262	10%
Healthcare	4,183	6%
Transportation	981	-20%
Home & Business Solutions	1,996	4%
Industrial Segment Sales	25,869	-1%
Industrial Segment Sales (x-Power)		3%

Source: Company data, J.P. Morgan estimates

On profitability, 1Q margins were down ~180bps y/y and down ~20bps y/y ex-ALO. The performance was mixed across segments, with Power (H launch costs) and Oil & Gas (low organic, high decrements) seeing major headwinds, while Healthcare (solid organic leverage) and Aviation (high mix of commercial services) were solid.

Table 37: GE Industrial 1Q16 Margins

	1Q	Y/Y Expansion (bps)
Power	11.0%	(540)
<i>Power ex-ALO</i>	<i>14.4%</i>	<i>(202)</i>
Renewables	5.0%	(57)
<i>Renewables ex-ALO</i>	<i>6.6%</i>	<i>108</i>
Oil & Gas	9.3%	(281)
Energy Connection	-3.8%	(542)
Aviation	24.3%	118
Healthcare	15.1%	68
Transportation	16.7%	(48)
Appliances & Lighting	5.8%	45
Industrial Segment Margin	12.8%	(181)
Industrial Segment Margin (ex-ALO)	14.5%	(16)

Source: Company data, J.P. Morgan estimates.

Looking at the profit bridge, mix was a positive contributor ex-Alstom (30bps y/y), driven by growth in services (up 2% organic) vs declines in equipment (down 11% organic). This was offset by unanticipated FX transactional impacts, which reduced margins by 80bps, representing a roughly \$200mm drag in the quarter. The other large contributor ex-Alstom was core cost productivity, helping by 40bps y/y.

Table 38: GE 1Q16 Industrial Margin Walk

	1Q16	2015
Previous year	14.5%	16.2%
Mix	0.3%	0.1%
Cost Productivity	-0.4%	0.3%
<i>FX Transactional Impacts</i>	<i>-0.8%</i>	<i>0.0%</i>
<i>Cost Productivity ex-FX</i>	<i>0.4%</i>	<i>0.3%</i>
Value gap	0.1%	0.4%
Gross simplification benefits	0.2%	0.3%
Base inflation/other	-0.3%	-0.3%
Alstom	-1.7%	-0.5%
Current year	12.8%	16.5%

Source: Company data, J.P. Morgan estimates.

Equipment margins were down ~380bps y/y ex-Alstom, implying breakeven margins and likely negative including Alstom. Positively, Service margins continued to improve, up ~190bps y/y to ~30.3% in the quarter (again, ex-Alstom).

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 39: Equipment/Service Margin Mix ex-Alstom

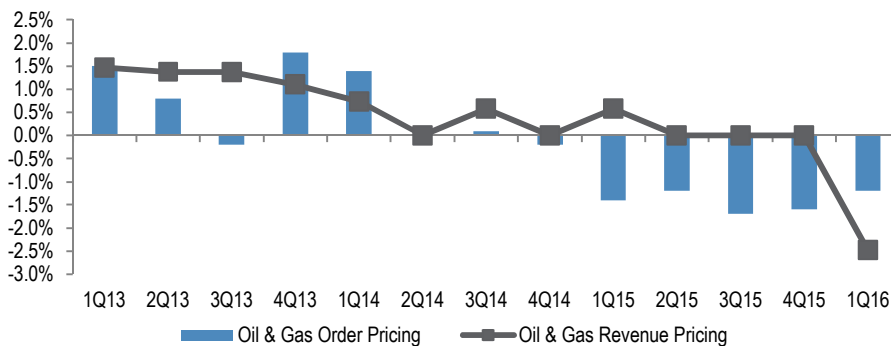
	2015	1Q15	1Q16
Sales (\$ B)			
Equip	59,644	13,563	12,100
Services	47,200	10,800	10,956
Total	106,844	24,363	23,056
Profit (\$ B)			
Equip	2,827	498	14
Services	15,293	3,062	3,319
Total	18,120	3,560	3,333
Margins			
Equip	4.7%	3.7%	0.1%
Services	32.4%	28.4%	30.3%
Total	17.0%	14.6%	14.5%

Source: Company data, J.P. Morgan estimates.

Oil & Gas margins hit hard in 1Q

Oil & Gas margins were weak as core volume declines start to hit hard on the bottom line. While pricing was not a significant headwind to segment numbers last year, the weak 2015 order pricing trends are now flowing through into revenues. 1Q also had a ~\$70mm negative impact from transaction FX headwinds, which are likely to come back later in the year (management sees 2/3s of the company wide FX transactional hit in 1Q coming back in 2Q-4Q). 2016 guidance for productivity is unchanged at ~\$800mm y/y, and we assume ~\$200mm came in 1Q. Backing this out, we arrive at core decrements of ~50% in 1Q vs ~75-80% in 4Q15.

Figure 61: Y/Y Equipment Order and Revenue Pricing in Oil & Gas



Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 40: Oil & Gas Alternate Margin Bridge 4Q15

Oil & Gas	Revenue	Growth	Profit	Inc/Dec
Start 4Q Adjusted Base as per company	5125		873	
Core	(333)	-6%	(265)	80%
FX/Acquisitions	(437)		(93)	21%
Cost out			200	
End 4Q15	4355		715	

Source: Company reports and J.P. Morgan estimates.

Table 41: Oil & Gas Alternate Margin Bridge 1Q16

Oil & Gas	Revenue	Growth	Profit	Inc/Dec
Start 1Q Adjusted Base as per company	4007		485	
Core	(547)	-14%	(281)	51%
FX/Acquisitions	(146)		(26)	18%
Transactional FX			(70)	
Cost out (annual \$800mm)			200	
End 1Q16	3314		308	

Source: Company reports and J.P. Morgan estimates.

Aviation 1Q may be as good as it gets for a while

Aviation margins stood out in 1Q, up 120bps y/y, driven by favorable mix of service vs equipment and cost productivity. Moving into 2Q, we see potential for lower y/y GENx shipments to be a slight tailwind (run rate of ~65 units expected for 2Q-4Q16, vs 89 in 2Q15), but this may be offset by costs related to the LEAP launch and initial shipments. Negative impacts from LEAP should ramp through the rest of the year and will likely be a significant headwind to margins. In addition, we don't expect the strong services growth seen in 1Q to repeat for the remainder of the year, hurting the overall equipment/services mix going forward.

Equipment Orders Hit by Oil & Gas and Aviation; Expect Slightly Weaker Rate in 2Q

On forward looking indicators, equipment orders were weaker than feared at down 8% y/y (down 18% organically), vs down 7% organic in 4Q and down 40% organic in 3Q. For 1Q, P&W core orders (ex-Alstom) were up 57% (up 46% in 4Q), driven by large H-orders (6 units vs 1 in 1Q15), as well as six steam turbines vs none in 1Q15. Oil & Gas was down ~70% (across all sub-segments, with Turbomachinery down the most at -92% y/y), and Aviation was down ~32% on difficult compares (up 53% y/y in 1Q15). Excluding the lumpy Aviation and Transportation businesses, equipment orders were still down high single digits in 1Q.

Table 42: GE Equipment Orders Y/Y

	1Q15	2Q15	3Q15	4Q15	1Q16
Aviation	53%	-8%	-36%	-67%	-42%
Transportation	-56%	44%	-97%	117%	-89%
Ex-Aviation, Transportation (ex-Alstom)	-13%	1%	-15%	-8%	-10%
Total Equipment Order Growth (Ex-ac/fx)	0%	18%	-40%	-7%	-18%

Source: J.P. Morgan estimates.

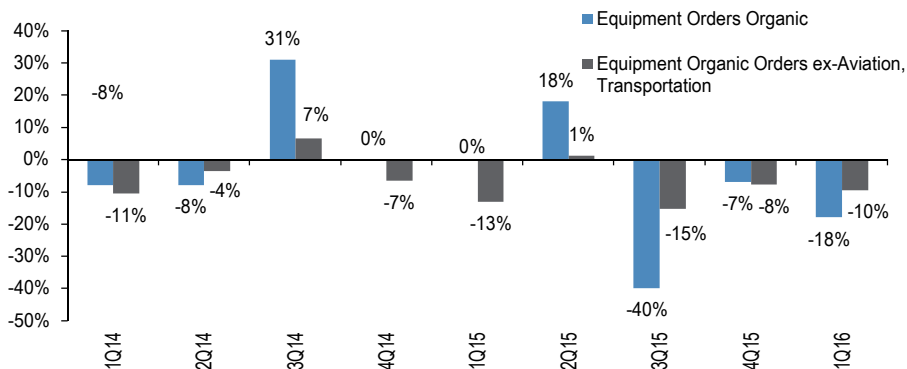
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 62: GE Industrial Equipment Organic Order Growth Weaker than Feared

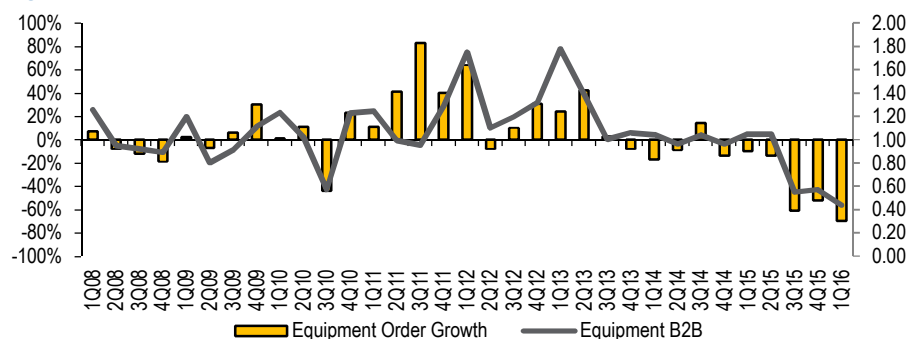
Y/Y growth, adjusted for acquisitions where disclosed.



Source: Company reports

Specifically, on Oil & Gas, expectations were low but down 70% y/y was worse than expected (now down 50% on a 4-qtr rolling basis). Book to bill was 0.45x, the lowest we have seen for this segment.

Figure 63: Oil & Gas Equipment B2B and Order Growth



Source: Company reports and J.P. Morgan estimates.

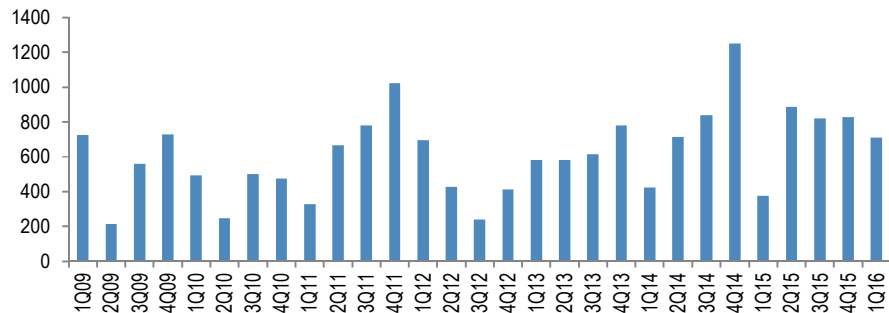
Renewables were another surprise in 1Q, with organic orders growth of ~94% overall (wind unit orders increased ~90% y/y). This was largely a function of easy prior year comps, as orders were pulled into 4Q14 from 1Q15 due to uncertainty around PTC, while this quarter orders were more normal as customers had more clarity on PTC. Indeed, looking at a 4-qtr rolling basis, 1Q orders were up 2% y/y (down 10% y/y in 4Q15). Also notable is that orders for the new 2.0x and 3.0x turbines were 70% of the mix and have a higher revenue base than legacy turbines.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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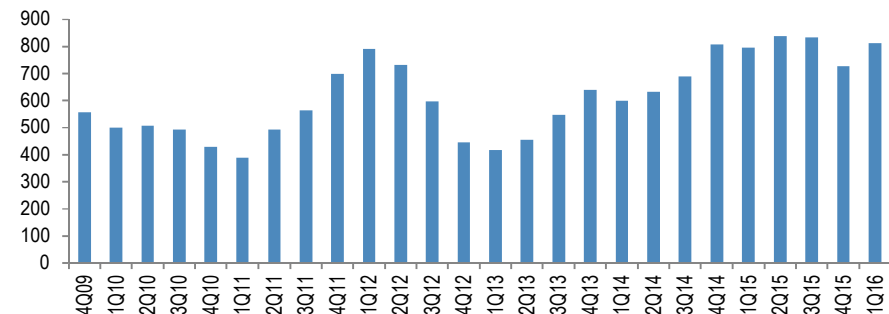
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Figure 64: GE Wind Unit Orders



Source: Company reports

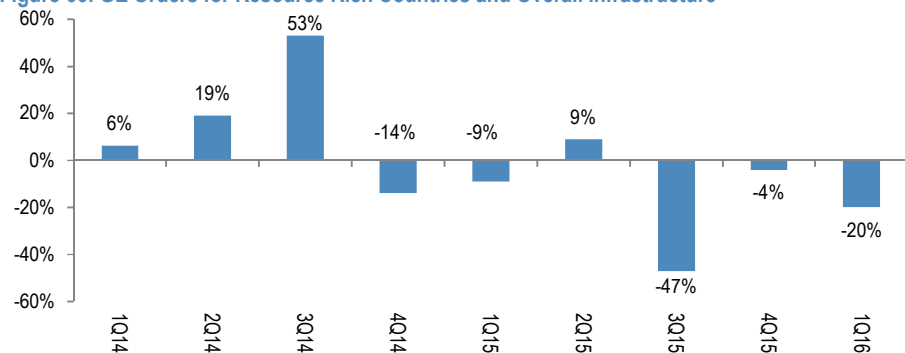
Figure 65: GE Wind Unit Orders (4-qtr rolling)



Source: Company reports

Lastly, Resource rich orders continued to decline, now down 20% y/y after being down 4% y/y in 4Q and down 47% in 3Q. We see risk of continued slowing as comps get tougher and lower oil prices play through related budgets.

Figure 66: GE Orders for Resource Rich Countries and Overall Infrastructure



Source: Company Reports.

2Q Order Profile Likely Worse than 1Q

Power dynamics: Management expected ~110 orders this year and assuming a similar split for the rest of year would imply ~28 in 2Q (25 in 1Q). At our conference in March, management said they expect to grow the backlog for H this year, implying potential for ~24+ H turbine orders this year, and assuming 27 for the year would imply 7 units per quarter for 2Q-4Q (6 in 1Q). Taking these dynamics into

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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consideration, this would imply ~10-15% core order growth q/q (ex-Alstom), and down ~15% y/y.

Renewables: For renewables, assuming a similar 4-qtr average run rate as 1Q would imply core orders down ~10% y/y in 2Q.

Transportation: Orders here can be lumpy, but assuming a similar order rate as 1Q would imply down ~80% in 2Q vs down 90% in 1Q.

Oil & Gas/Energy Connection: Assuming a similar dollar value as 1Q would imply orders down 70% in Oil & Gas and down ~30% in Energy Connection (ex-Alstom).

Healthcare: Order commentary here has been positive from management, and we see continued growth in the low to mid single digit range.

Aviation: Orders can be lumpy, and the segment faces a tough 2Q comp due to the Paris Airshow in June last year. Note, however, that 3Q could see a dramatic pickup with the Farnborough airshow in July.

All-in, we expect an equipment order growth print that's likely down ~25% y/y on a core basis, slightly worse than 1Q levels of down 18% organic.

Table 43: GE Equipment Order Growth (ex-ALO)

\$B

Equipment Orders (x-ALO)	2Q15	1Q16	2Q16E	1Q16 Y/Y	2Q16 Y/Y
Power	1.8	1.4	1.5	57%	-16%
Renewables	2.0	1.6	1.8	94%	-10%
Oil & Gas	2.2	0.7	0.7	-70%	-68%
Energy Connection (ex-ALO)	1.5	1.0	1.0	-30%	-33%
Aviation	4.0	2.6	2.9	-35%	-28%
Healthcare	2.7	2.4	2.8	3%	4%
Transportation	0.5	0.1	0.1	-89%	-80%
Total (ex-ALO)	14.7	9.8	10.8	-18%	-26%

Source: Company reports and J.P. Morgan estimates.

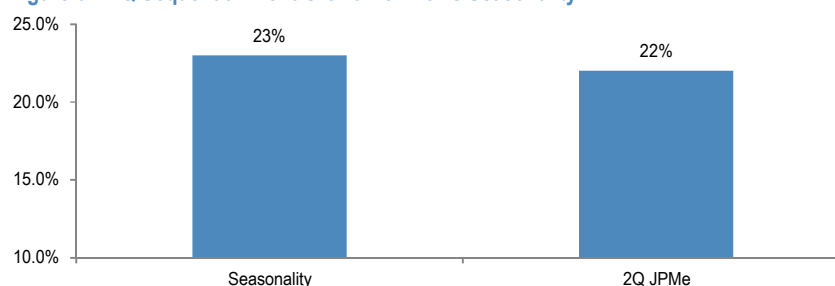
2Q Profits Move Lower Post 1Q Result; Street EPS Moves up Due to Gains

We introduce an EPS estimate of \$0.46 which includes \$0.04 in GE Capital earnings (in-line with management guidance excluding preferred dividend costs) and \$0.43 in Industrial earnings. Our model now shows organic sales flat, with margins down 250bps (down ~80bps y/y ex-Alstom), leading to a segment profit decline of ~5% y/y. On a sequential basis, profits are expected to grow ~22%, in line with historical seasonality, which suggests our estimates are not conservative. We summarize our revenue and profit assumptions in the tables below and also walk through some of the segment dynamics.

Table 44: We Forecast 80bps Margin Contraction in 2Q (ex-ALO)

	Organic Growth	Profit Growth y/y	Margin	bps margin expansion
Power	5.0%	-5.0%	14.0%	(669)
Power ex-Alstom		-12.0%	17.6%	(309)
Renewables	10.0%	25.0%	8.0%	(78)
Renewables ex-Alstom		25.0%	10.6%	183
Oil & Gas	-18.0%	-42.0%	11.0%	(389)
Energy Connection	-3.0%	-55.0%	1.5%	(314)
Aviation	5.0%	4.0%	20.1%	(20)
Healthcare	3.5%	5.0%	16.9%	64
Transportation	-15.0%	-24.0%	22.5%	(81)
Appliance & Lighting	3.5%	5.0%	7.5%	12
Total Industrial	-0.2%	-7.0%	13.8%	(246)
Total Industrial (ex-Alstom)		-9.0%	13.8%	(79)

Source: J.P. Morgan Estimates

Figure 67: 2Q Sequential Profit Growth: JPMe vs Seasonality

Source: Company Report, J.P. Morgan Estimates

P/W remains challenged near term on margins: Margins continue to be impacted here as H-turbine shipments ramp. GE shipped 4 H turbines in 1Q and expected to hit breakeven on product costs by the 12th turbine before turning positive. However, operating margins will continue to be impacted driven by launch costs related to testing/factory costs which are more 1H weighted. We model profits down y/y, with margins down ~300bps y/y (ex-Alstom) vs down ~200bps in 1Q.

Oil & Gas fading further: Within Oil & Gas, management cut revenue guidance for the year to down 15-20% from down 10-15% prior, but profit declines are now expected to more than double, at down ~30% versus 10-15% prior. This suggests hits from pricing and high decrements on core volume. Conversations with management suggested that while productivity targets for the year remain unchanged at ~\$800mm y/y, they are coming at higher costs than previously anticipated. After the 280bps margin decline in the segment in 1Q, we now see a 390bps decline in 2Q (42% y/y profit declines, vs 37% in 1Q).

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Aviation gives back some margin: Aviation growth is expected to remain strong after the 10% organic in 1Q. While we see some moderation from 1Q levels, we still see potential for MSD type organic growth. Key here is that the LEAP engines start to ship in the quarter, which has a negative impact on the margin mix. This likely gets offset to some extent by lower GENx shipments y/y (a positive for margins), as some units in the prior year were pushed from 1Q to 2Q. We also expect service revenues to remain strong in the MSD range in 2Q.

Other segments: Among other segments, we see solid growth in Renewables, albeit some moderation from 1Q levels which benefitted from easier comps and pushouts. Healthcare should see continued cost out, driving margin expansion similar to 1Q, and profit growth of MSD-HSD in 2Q (including fx). Transportation, on the other hand, is likely to see continued pressures, and the guide for 800 locos in 2016 was maintained, down 20% y/y, suggesting y/y declines could get slightly better in 2Q v 1Q (including the signaling divestiture). We model down ~25% y/y profit declines in 2Q vs down 27% in 1Q.

Corporate Moving parts

We walk through the moving parts in GE's corporate line items below. While the annual guidance is for restructuring to offset any gains, there is volatility on a quarterly basis due to the timing of restructuring actions and gains. For 2Q, restructuring + gains is expected to have a positive \$0.09 impact on EPS vs the \$0.05 drag realized in 1Q numbers.

Table 45: Qtrly Corporate Expense Cadence (JPMe)

\$mm

	1Q16	2Q16E	2H16E	2016E
Gains/impairments	59	3,200	600	3,859
Principal retirement plans, GAAP	(468)	(510)	(1,022)	(2,000)
Total Restructuring	(686)	(1,500)	(1,173)	(3,359)
Alstom Restructuring/other	(183)	(450)	(592)	(1,225)
Restructuring expense/other	(503)	(1,050)	(581)	(2,134)
Other Corporate Costs & Eliminations	(476)	(475)	(999)	(1,950)
Adjusted Corporate Restructuring + Gains EPS impact	(432)	(473)	(996)	(1,901)
	(\$0.05)	\$0.09	(\$0.04)	\$0.00

Source: J.P. Morgan Estimates.

GE Capital Details

GE Capital 1Q results were ahead of the annual run rate, with \$0.05 in EPS vs the full year guide of \$0.15. Net income from the 'Vertical' assets was \$496mm, and management expects 2Q to return to the annual run rate of \$350-400mm, with 2016 now expected at ~\$0.17. We point out that 1Q earnings at EFS included ~\$190mm in after-tax gains and ~\$130mm net of impairments.

Table 46: Vertical Assets Earnings 1Q14-1Q16

\$mm

	1Q14	2Q14	3Q14	4Q14	1Q15	2Q15	3Q15	4Q15	1Q16
EFS	153	76	61	112	35	109	(38)	(19)	137
GECAS	352	343	133	217	307	361	313	354	332
EFS + GECAS	505	419	194	329	342	470	275	335	469
Vertical Assets overall	530	451	228	412	352	531	351	438	496

Source: J.P. Morgan Estimates

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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2016 Outlook: 2H Ramp Optimistic; We are Below Guidance

Ind Seg Profit Guidance from 4Q call: “A little better than \$19 B” – CFO Bornstein

Ind Seg Profit Guidance from 1Q call: “assume the \$19 B+ for the year is still a decent number”? –analyst question

“We have a few things. We expect to close Appliances in June, so you’ll see the gain associated with Appliances, let’s say, roughly \$0.20 a share. We expect to do about \$0.11 of restructuring in the second quarter as we stand here today. And I think the margin rate in the second quarter, based on LEAP, both launch and initial shipments and H, will get better sequentially every quarter on H cost. I think the margin rate will be a little bit of a challenge in the second quarter, no change on how we think about it for the year. We talked about 50 basis points of improvement in the core business or the ex-Alstom business, I should say, no change in view on that. But the second quarter could be a little bit challenged with what we’ve got going on with the LEAP, the H and the wind launch on 2.X and 3.X.” – CFO Bornstein

With the 1Q start, the standing annual guidance now looks like a stretch and we are materially below. Notably, while the overall “framework” has not changed, with high level comments that weakness in Oil/Gas is offset by Aviation, we find it a challenge to hit the guide management last spoke to. To clarify, on the 4Q call, management directly responded to an analyst question noting “a little over” \$19 B as the standing guide. When asked on the 1Q call, as per the side comment there was no direct answer. We view this as an acknowledgement that the \$19 B is now a stretch but do not believe the headline was appropriately discounted. In the end, this is important, because as move into the important out years, the one time items fade and what’s left are Industrial profits, and a lower base ultimately means lower earnings and FCF. Ultimately, to hit the \$2 consensus, we estimate profits needs to be in the \$19B+ range (followed by high single digit growth in 2017/2018).

Table 47: Seasonality Implied 2016 Profits (ex-ALO)

\$mm

	1H16	Seasonality	2H16	2016
Power (ex-ALO)	1,471		2,620	4,091
Renewables (ex-ALO, JPMe)	270		357	627
Energy Connection (ex-ALO, JPMe)	(10)		112	102
Oil & Gas	662	37.8%	913	1,575
Aviation	2,843	10.1%	3,130	5,973
Healthcare	1,368	28.4%	1,757	3,125
Transportation	416	19.9%	500	916
Appliance & Lighting	287	30.8%	127	414
Total ex-Alstom	7,309		9,588	16,896
Alstom JPMe	50		599	649
Total	7,377		10,187	17,545
Guidance				~19,000+
Total JPME				~18,100

Source: J.P. Morgan Estimates.

We start to look at this using historical seasonality for the major segments but our standing estimates for Renewables and Energy Connection due to restatements post Alstom. We don’t use historical seasonality for Power either, given lumpiness in turbine and aero-derivative shipments. Instead, we model this segment using trajectory of estimates for turbine shipments in 2H and ramp in service revenues. We start by looking at implied 2016 profits based on last 5 years profit trajectory from 1H to 2H for Oil & Gas, Aviation, Healthcare, Transportation, and Appliance & Lighting (for Appliance & Lighting we adjust for the Appliance divestiture in 2H16).

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 48: Seasonality Implied 2016 Profits (ex-ALO)

\$mm

	1H16 JPMe	Seasonality (2011-2015)	2H16	2016
Oil & Gas	662	37.8%	913	1,575
Aviation	2,430	10.1%	3,130	5,983
Healthcare	1,368	28.4%	1,757	3,125
Transportation	416	19.9%	500	916
Appliance & Lighting	287	30.8%	127	414

Source: J.P. Morgan Estimates

For Energy Connection and Renewables, we use standing JPM estimates given the lumpiness and lack of accurate historical seasonality due to restatements. For Renewables specifically, we model revenue and profits based on assumed Wind shipment trajectory in 2H. Keeping this in perspective, these two segments combined contributed <5% of overall GE Industrial profits in 2015 (ex-ALO), not a huge needle mover.

Table 49: Seasonality Implied 2016 Profits (ex-ALO)

\$mm

	1H16 JPMe	2H16	2016
Renewables (ex-ALO, JPMe)	270	362	632
Energy Connection (ex-ALO, JPMe)	-10	163	153

Source: J.P. Morgan Estimates

For Alstom, we model a significant ramp in 2H based on our synergy and core profit assumptions.

Table 50: Seasonality Implied 2016 Profits (ex-ALO)

\$mm

	1H16 JPMe	2H16	2016
Alstom JPMe	50	599	649

Source: J.P. Morgan Estimates

This brings us to Power, which is the key debate into the 2H. To start, looking at the turbine shipment trajectory, we model 115 for the year and ~40 in 1H16, all in line with management guidance. Of this, we see H turbine shipments going from ~10 units in 1H to 14 in 2H and all other turbines increasing from ~30 units in 1H to ~61 in 2H. The key TBD is high margin Aero-derivative units, for which there were five shipments in the quarter and just two unit orders. Last year, GE shipped ~85 in total. This business can be lumpy with a book and ship type nature, so there is a possibility of dramatic improvement in 2Q-4Q, and we model total shipments of ~60 for the year, still down ~30% y/y but up dramatically off of 1Q levels. Other assumptions to gauge the sequential pickup from 1H to 2H include ~30% margin for services, MSD margins for non-H turbines, and ~\$250-300mm in overall losses related to the H-turbine shipments (as guided by management). To be clear, this analysis is purely illustrative, and there could be seasonal variation related to margins and mix of revenues in general (we just use 1Q as the base here).

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 51: Illustrative Implied 2016 Power (ex-ALO) profits based on 1Q Profits and Shipments trajectory

	1Q16	2Q16E	2H16E	2016E
Thermal Revenues	960	1,723	4,782	7,465
<i>H Turbine</i>	340	510	1,260	2,110
<i>Other Turbine</i>	520	1,213	3,522	5,255
Aero-derivative Revenue	100	200	904	1,204
Service Revenue	2,840	3,408	7,446	13,694
AGPs	405	450	1,017	1,872
<i>Other Services</i>	2,435	2,958	6,429	11,822
Total	3,800	5,331	13,132	22,263
Thermal Profits	(199)	(64)	251	(12)
<i>H Turbine</i>	(225)	(125)	75	(275)
<i>Other Turbine</i>	26	61	176	263
Aero-derivative Profits	11	23	108	143
Service Profits	735	965	2,277	3,977
AGPs	187	225	510	922
<i>Other Services</i>	548	740	1,767	3,055
Total Profits As Per Seasonality	547	924	2,637	4,107
Total Profits JPMe (Ex-ALO)	547	924	3,280	4,751

Source: Company reports and J.P. Morgan estimates.

Net- net, we arrive at implied 2016 profits of ~\$17.5B based on normal seasonality. This compares to guidance of ~\$19B+. We are not saying that management's targets are out of bounds, but looking at the above analysis we don't think this is conservative by any stretch. We model ~\$18B for the year, a number that's above what normal seasonality would imply, although below the company's expectations (discussed in detail later in the note).

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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2016-2018 Earnings Outlook: “I Want My \$2”, Part 2

\$2 has been the carrot on the stick since 2011, we still don't think it happens in '18

While almost all companies are being judged on their near term earnings performance, GE has managed to continuously push the investor view forward, and we had highlighted in a prior note how \$2 in EPS has been consensus target for this stock since 2011 ('13 est in '11). The company officially threw their hat in the ring on this number with the GECS asset sale announcement, providing a simplified bridge to “substantially above \$2”, while the activist involved here painted a picture for \$2.20. Given consensus is there now, and the stock is pinned to 15x this number, a reasonable, yet still expensive, 2 year forward multiple, we think this remains the bar for the stock.

Table 52: Peak 2-Yr forward Consensus EPS Estimates vs Actual/Current JPMe

	2-yr Forward Street	Actual/JPMe
2011 (2013E)	\$1.96	\$1.64
2012 (2014E)	\$2.01	\$1.65
2013 (2015E)	\$2.02	\$1.31
2014 (2016E)	\$2.09	\$1.48
2015 (2017E)	\$1.93	\$1.65
2016 (2018E)	\$2.03	\$1.85

Source: J.P. Morgan estimates.

Following on the previous section, at some point the near term (2016) runs into the long term (2018), and we are therefore close to the point where core fundamentals will matter more. In the end, our fresh 2016-2018 estimates are below consensus for all years, with estimated revenue CAGR of ~2%, margin expansion of ~40bps/y (down ~80bps in 2016 y/y), and Industrial profit CAGR of ~7%, which includes a segment profit CAGR of ~5% (ex-adjusted corporate). The bottom line is that while the forward look is “ok”, generally in line with the group, the lower base means there is more wood to chop to an future expectation that once again looks too high.

Table 53: Industrial Profit Model

Profit (\$mm)	2015	2016E	2017E	2018E		2016E Y/Y	2017E Y/Y	2018E Y/Y
Power	4,502	5,175	6,299	7,172		14.9%	21.7%	13.9%
Power ex-Alstom	4,582	4,751	5,302	5,653		3.7%	11.6%	6.6%
Renewables	431	707	881	1,068		64.1%	24.5%	21.3%
Renewables ex-Alstom	500	632	811	898		26.5%	28.2%	10.8%
Oil & Gas	2,427	1,512	1,194	1,252		-37.7%	-21.0%	4.8%
Energy Connection	270	303	566	745		12.0%	87.0%	31.7%
Energy Connection ex-Alstom	275	153	346	445		-44.5%	126.7%	28.8%
Aviation	5,507	5,857	6,065	6,109		6.3%	3.6%	0.7%
Healthcare	2,882	3,041	3,259	3,476		5.5%	7.2%	6.7%
Transportation	1,273	1,087	1,070	1,118		-14.6%	-1.6%	4.5%
Appliance & Lighting	674	389	166	181		-42.3%	-57.4%	9.1%
Total Segment Profit	17,966	18,070	19,499	21,120		0.6%	7.9%	8.3%
Total Segment Profit (ex-ALO)	18,120	17,421	18,213	19,132		-3.9%	4.5%	5.0%
Adjusted Corporate (exc restr/gains)	(2,107)	(1,901)	(1,850)	(1,750)				
Total Industrial Profit (incl adj corp and ALO)	15,859	16,170	17,649	19,370		2.0%	9.1%	9.8%

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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High Level Revenue Model

Before delving into a detailed revenue outlook, we provide a quick bottom up summary of our revenue growth assumptions by sub-segment for 2016. Overall, we see 2.5% organic CAGR through 2018 (flat in 2016, up 2.5% in 2017, up 3% in 2018). Among the segments, Aviation and Power are the key revenue drivers through 2018, offset by weakness in Oil & Gas and Transportation. This is a decent rate of internal growth bolstered by backlogs.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 54: Sub-segment Revenue Model

	15 Revs	% of sales/segment sales	'16 Organic Growth rate	'17 Organic Growth rate	'18 Organic Growth rate	'16-18 CAGR
Power	21,490	20%	9%	4%	3%	5%
Services/other	13,279	62%	8%	5%	4%	6%
Gas Power Equipment (HDGTs, Steam)	5,574	26%	23%	2%	1%	8%
Aero-derivative Equipment	1,720	8%	-29%	0%	0%	-10%
Alstom	917	4%				
Acquisitions/Divestitures						
Renewables	6,273	6%	16%	10%	4%	10%
Equipment	6,022	96%	17%	11%	4%	9%
Services	251	4%	5%	3%	3%	2%
Acquisitions/Divestitures						
Aviation	24,660	23%	6%	4%	4%	5%
Commercial Services	9,840	40%	10%	8%	8%	9%
Comm'l OE	8,137	33%	5%	2%	2%	3%
Systems (BGA, Integrated, Avionics, Avio)	2,898	12%	2%	2%	2%	2%
Military Engine	1,813	7%	0%	0%	0%	0%
Military Services	1,973	8%	4%	2%	2%	3%
Acquisitions/Divestitures						
Oil and Gas	16,450	15%	-18%	-10%	0%	-9%
Turbomachinery	4,915	30%	-17%	-16%	-3%	-13%
Drilling/Subsea	4,290	26%	-23%	-18%	-6%	-17%
Downstream	1,645	10%	-8%	-5%	1%	-5%
Surface	2,310	14%	-30%	13%	17%	-1%
Digital Solutions	3,290	20%	-7%	-5%	0%	-5%
Acquisitions/Divestitures						
Healthcare	17,639	16%	4%	3%	4%	4%
Healthcare system	11,995	68%	2%	3%	3%	2%
Life Sciences	4,057	23%	8%	6%	6%	6%
IT	1,588	9%	5%	4%	4%	4%
Acquisitions/Divestitures						
Appliances Lighting	8,751	8%	3%	4%	4%	4%
Appliances	6,500	74%	2%	4%	0%	3%
Lighting	2,251	26%	4%	4%	4%	4%
Acquisitions/Divestitures						
Transportation	5,933	5%	-12%	-2%	4%	-4%
Loco Services	2,255	38%	3%	2%	5%	3%
Locos Equipment	2,587	44%	-25%	-9%	2%	-11%
Mining	350	6%	-10%	0%	0%	-3%
Marine, Stationary & Drilling/Other	742	13%	-15%	5%	10%	0%
Acquisitions/Divestitures						
Energy Management	7,600	7%	-1%	2%	4%	1%
Power Conversion	2,204	29%	-8%	0%	5%	-1%
Digital Energy	1,444	19%	5%	5%	5%	5%
Industrial Solutions	3,952	52%	-5%	3%	3%	0%
Total Industrial Organic Growth			2%	3%	3%	2.5%

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Margin Summary

We provide below an analysis of the income statement by the major segments, as well as segment profit walks for 2015-2018E in the next section. As a summary, we model 100-150bps of margin expansion from 2015-2018, and ~200bps from 2016-2018, primarily driven by y/y synergies from the Alstom deal. Ex-Alstom, we see ~50bps of margin expansion/yr from 2016-2018. This is inline with management guidance of 16%+ by 2018.

Table 55: Industrial Segment Margin

	2015	2016E	2017E	2018E	2016E Y/Y (bps)	2017E Y/Y (bps)	2018E Y/Y (bps)	2015-2018E (bps)
Power	20.9%	17.5%	20.5%	22.6%	(349)	303	209	163
Power ex-Alstom	22.3%	21.4%	22.9%	23.7%	(91)	158	73	140
Renewables	6.9%	8.0%	9.0%	10.5%	113	100	150	363
Renewables ex-Alstom	8.1%	9.2%	10.4%	11.0%	109	124	58	291
Oil & Gas	14.8%	11.5%	10.1%	10.5%	(325)	(145)	45	(425)
Energy Connection	3.6%	3.0%	5.5%	7.0%	(55)	250	150	345
Energy Connection ex-Alstom	4.1%	3.0%	6.5%	7.9%	(114)	354	135	375
Aviation	22.3%	22.3%	22.1%	21.3%	(3)	(20)	(80)	(103)
Healthcare	16.3%	17.0%	17.6%	18.1%	66	60	54	180
Transportation	21.5%	21.9%	22.0%	22.1%	44	10	10	64
Appliance & Lighting	7.7%	6.8%	6.8%	7.2%	(95)	5	40	(50)
Total Segment Margin	16.5%	15.5%	16.8%	17.6%	(101)	132	80	110
Total Segment Margin ex-Alstom	17.0%	17.0%	18.0%	18.2%	8	94	24	126
Total Margin (incl adjusted corp and Alstom)	14.8%	14.1%	15.4%	16.4%	(76)	137	94	155

Source: Company reports and J.P. Morgan estimates.

Table 56: Industrial Segment Profit Walk, 2015

\$ millions except where noted

	Mgn walk	Sales impact	Profit impact
Previous year	16.2%	109,726	17,764
Mix	0.1%		109
Cost Productivity	0.3%		370
Gains	0.0%	0	0
Value gap	0.4%	375	500
Acquisitions	-0.4%	1,436	(188)
FX	0.0%	(4,748)	(775)
Core	0.0%	2,007	336
Gross simplification benefits	0.4%		450
Other ongoing inflation/other	-0.6%		(600)
Current year	16.5%	108,796	17,966
Current year (ex-Alstom)	17.0%	106,840	18,120

Source: J.P. Morgan estimates

Table 57: Industrial Segment Profit Walk, 2016E

\$ millions except where noted

	Mgn walk	Sales impact	Profit impact
Previous year	16.5%	108,796	17,966
Mix	-0.5%		(554)
Cost Productivity	0.3%		291
Gains	0.0%	0	0
Value gap	-0.2%	(750)	(300)
Alstom	-1.1%	12,394	803
Other Acquisitions/Div	0.3%	(4,951)	(457)
FX Translational	0.0%	(1,495)	(224)
Core	0.1%	2,598	520
Gross simplification benefits	0.3%		400
Other ongoing inflation/other	-0.3%		(375)
Current year	15.5%	116,592	18,070

Source: J.P. Morgan estimates

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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EPS Bridge 2016-2018

Finally, looking at the EPS bridge, there are a number of moving parts. Acquisitions/divestitures net out to a \$0.01 headwind in 2016, taking into account the Alstom core profits + tax benefits + restructuring/corporate item, as well as the Signaling and Appliance divestitures. The other key non-fundamental item is lower share count due to buybacks from GECS proceeds help by ~0.13 y/y. While Alstom becomes fully organic later this year, we continue to break it out in the EPS bridge given the magnitude of synergy benefits and profit ramp expected from the deal. Among fundamentals, we see tailwind from cost productivity and simplification as ~\$0.05-0.06 each year, offset by \$0.03 of inflation and mix, which we see as a major headwind in 2016 and slowing down in 2017 and 2018.

Table 58: EPS Bridge 2015-2018E

	2015	2016E	2017E	2018E
Beginning EPS	1.65	1.31	1.48	1.65
Net Acquisitions/Divestitures	0.01	(0.01)	0.02	0.10
<i>Acquisitions ex-BD</i>	<i>(0.00)</i>	<i>(0.01)</i>	<i>0.00</i>	<i>0.00</i>
<i>Alstom Power & Grid Segment Profits</i>	<i>(0.01)</i>	<i>0.07</i>	<i>0.05</i>	<i>0.07</i>
<i>Alstom Tax Benefit</i>	<i>0.03</i>	<i>0.03</i>	<i>(0.05)</i>	<i>0.00</i>
<i>Alstom Restructuring/other corp</i>	<i>(0.01)</i>	<i>(0.07)</i>	<i>0.04</i>	<i>0.03</i>
<i>Appliance Divestiture</i>	<i>0.00</i>	<i>(0.02)</i>	<i>(0.02)</i>	<i>0.00</i>
<i>Signaling Divestiture</i>	<i>(0.00)</i>	<i>(0.00)</i>	<i>0.00</i>	<i>0.00</i>
Pension, operating	0.02	0.00	(0.00)	0.00
Net gains/restructuring, in corporate	0.14	0.07	(0.03)	(0.02)
Other Corporate Costs & Eliminations	0.01	0.01	0.01	0.01
Interest	(0.01)	(0.00)	0.00	0.00
Forex	(0.06)	(0.02)	0.00	0.00
Tax Rate (Ex-NBCU gain)	0.03	(0.00)	(0.01)	(0.01)
Share Count	0.01	0.13	0.08	0.04
Base EPS	1.80	1.49	1.55	1.77
Industrial Price/Cost (ex-wind)	0.04	(0.02)	(0.01)	0.00
Cost Productivity	0.03	0.02	0.03	0.03
Simplification	0.04	0.03	0.03	0.03
Other Inflation	(0.05)	(0.03)	(0.03)	(0.04)
Industrial Volume	(0.03)	0.05	0.11	0.08
Mix	0.01	(0.05)	(0.03)	(0.01)
GE Capital	(0.53)	(0.01)	(0.01)	(0.01)
Final EPS	1.31	1.48	1.65	1.85

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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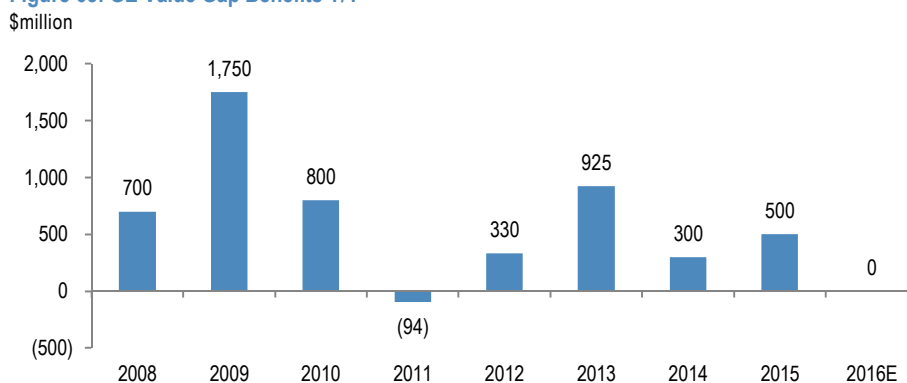
Margins: Top Down Approach Shows Continued Tailwinds from Simplification, Cost Productivity, and LTSA adjustments, Offset Somewhat by OE Mix

From a top down perspective, we see continued tailwinds from restructuring and initiatives to drive gross margin expansion, including growth in software revenue. Headwinds to margin expansion come from OE mix, driven by the H-turbine launch/ramp, launch of LEAP, and new products, as well as base products growth, in Renewables. Value gap, on the other hand, which has been a tailwind in 2014/2015, is likely to have a neutral impact in 2016 but is a key TBD into 2017 and beyond, as commodities likely see an upward trend while pricing continues to see the tail of impacts from recent commodity declines, particularly in Oil & Gas. We walk through the key parameters in detail below.

Value Gap – Weaker Pricing Offset by Raws Deflation; Expect 2016 Contribution Lower than 2015, with 2017 and beyond a TBD

Value gap has been an upside driver in 2015, which is not a surprise to us given significant raw material deflation through the course of the year. Pricing has come in largely as expected, with Oil & Gas somewhat better than expected given little repricing in existing backlogs that had not seen any pricing pressure in 2014. Moving into 2016 however, while we see raw materials as a benefit given the benefits of declines are yet to be fully realized, we see pricing getting worse, particularly at Oil & Gas given recent order pricing trends. Net-net, we see y/y margin expansion from value gap at lower levels than in 2015 – standing management guidance is for negligible value gap benefits in 2016, with \$1B in deflation benefits offset by pricing pressure, with ~50% of it coming in Oil & Gas. Impacts in 2017 and beyond are a TBD, as commodities recover from their slump in 2014/2015 and pricing sees the lag impact from these declines, particularly in Oil & Gas (GE's businesses are long cycle in nature and there is a natural lag on impacts to revenues).

Figure 68: GE Value Gap Benefits Y/Y



Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Simplification

Simplification benefits have totaled ~\$2.2B in 2014+2015, and we expect to see continued benefits next year, primarily driven by the significant amount of restructuring actions taken in 2015 and particularly in 4Q15. As highlighted earlier, while we don't see all of this flowing through the SG&A line, we still see solid benefits y/y with other savings from these restructuring actions likely flowing through COGS (discussed next). Based on 2015 and prior year actions, we see ~\$850mm in simplification benefits, with upside from actions taken in 2016.

Table 59: Simplification benefits in 2014/2015 from restructuring actions in 2013/2014/2015

	2014+2015
Implied 2014+2015 savings from restructuring	3,345
Other corp costs reduction	583
Implied segment operating savings	2,761
Simplification Savings Reported (ex-Cost Productivity)	2,220
% of Saving in core SG&A	80%

Source: Company reports and J.P. Morgan estimates.

Table 60: Expected benefits in 2016 from 2014/2015 actions

	2016E
Implied 2014+2015 savings from restructuring	1,269
Other corp costs reduction	200
Implied segment operating savings	1,069
Simplification Savings Reported (ex-Cost Productivity)	859
% of Saving in core SG&A	80%

Source: Company reports and J.P. Morgan estimates.

Gross Margin - Solid execution on Cost Productivity, Increasing Services/Software Mix and Brilliant Factory Initiatives Offset By OE Mix; But Performance not differentiated

GE has been targeting ~50bps/y of GM expansion, and execution so far has been on track, with management aggressively attacking this metric similar to what they have been doing with SG&A. We believe the move to a more incentivized comp structure that aligns with individual ownership of targets should drive better performance and productivity, while also keeping labor inflation in check.

A few drivers of this GM improvement are the 1) Brilliant factory initiative and 2) GE Store. As an example of Brilliant Factory, GE is transforming their Greenville facility, which manufactures various products like gas turbines and parts of wind products, into a 'Brilliant Factory' – an initiative where the company is collaborating advanced manufacturing and industrial internet in order to enable effective data sharing, connecting various teams and optimizing production using an internal GE App Store (via Predix) and engaging with supply chain partners through the DMC platform (Digital Manufacturing Commons). The Greenville facility itself is expected to generate ~\$100mm in savings from this initiative over the next 3 years (2015-2017). A few examples of achieving this include 3D printing (20-80% improvement in weight reduction), Hole Drilling (+50% yield improvement) and Adaptive welding (working efficiency going to 70% from 12%). We see applications of such advanced analytics increasing productivity over the long term, with every 1% in savings resulting in ~\$500mm savings as per the company. The GE Store, meanwhile, is a suite of technologies that can be leveraged across different businesses. An example of this would be in subsea applications which include water injection and processing systems from P&W, pumps and compressor technology from Turbomachinery, power transmission and distribution from Energy Connection, flow assurance and advanced riser tech from the GRC (Global Research Center), diagnostic software imaging from Healthcare segment, valve coatings and advanced materials from Aviation and so forth.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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One of the other key aspects of margin expansion at GE, particularly on the gross margin front, has been the impact of vertical integration of JVs and acquisitions, particularly in Aviation. A recent example is the acquisition of Metem, a provider of precision cooling hole manufacturing technologies for gas turbines, with GE as one of its largest customers. With vertical integration of such technologies, we see benefits from a sourcing standpoint helping gross margins. A look at JVs and acquisitions over the last few years shows how GE has acquired and vertically integrated key components of its end product offering.

Figure 69: Vertical Integration of JVs in Aviation



Source: Company reports. Used with Permission

While these initiatives should drive solid underlying gross margin improvement, we believe this is not that differentiated from the performance seen at other global large cap industrial peers, which have seen benefits from fx hedging gains and sourcing, something we believe also likely benefited GE this year.

Table 61: 2015 Gross Margin Expansion at Large Global Industrial Peers

	y/y Expansion
HON	0.8%
UTX	1.8%
DHR	0.7%
EMR	-1.2%
ROK	0.9%
CAT	-0.3%
ETN	0.9%
Average	0.5%
Average (ex-EMR)	0.8%
GE (ex-Alstom)	0.8%

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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In addition, we believe progress here could be hampered in the coming years from increasing mix headwinds related to upcoming/recent OE launches, along with headwinds from flow through of weaker order pricing trends in the Oil & Gas business. We discuss this below.

Services V OE Mix (Ex-Alstom) – To start, we take a look at our overall Equipment vs Service growth expectations in 2016. We leave out the recent Alstom/Appliance deals for this analysis and address it separately given little detail on Service/OE margin mix at Alstom. As discussed earlier, from an overall margin perspective, Alstom will be significantly dilutive.

For 2016, we currently forecast Services growth of ~3% and Equipment declines of ~4%. If the respective margins are held constant, this dynamic alone could drive ~50bps of overall margin expansion.

Table 62: GE Equipment vs Services Organic Growth (Ex-Alstom)

	2016 Y/Y
Equipment	-2%
Power	9%
Renewables	0%
Oil & Gas	-32%
Energy Connection	-5%
Aviation	4%
Healthcare	0%
Transportation	-23%
Appliance & Lighting	3%
Services	4%
Power	7%
Renewables	12%
Oil & Gas	-9%
Energy Connection	5%
Aviation	9%
Healthcare	4%
Transportation	5%

Source: Company reports and J.P. Morgan estimates.

Table 63: GE 2016 Margin expansion holding Equipment and Services Margin flat

Ex-Alstom	2015	2016E
Services Revenue	47,200	47,957
OP	15,293	15,538
Mgn	32.4%	32.4%
Equipment Revenue	59,644	57,109
OP	2,827	2,707
Mgn	4.7%	4.7%
Total OP	18,120	18,245
Total Revenue	106,844	105,066
Mgn	17.0%	17.4%

Source: Company reports and J.P. Morgan estimates.

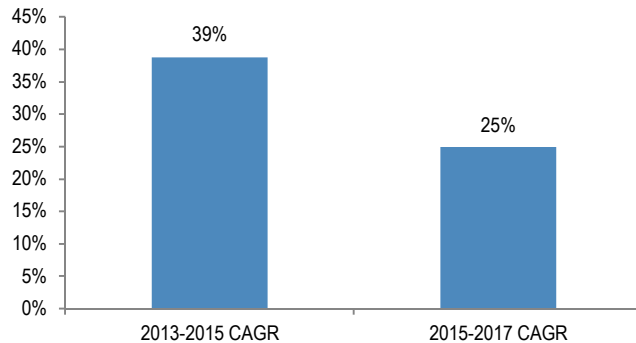
Starting with Service, while at 32-33% margin, the business is not necessarily “under-earning”, we do not argue much with continued margin expansion potential here given increasing software mix, continued growth in AGPs and commercial aerospace spares. However, we do have difficulty forecasting the ramp in non-cash gains from LTSA contract adjustments, the key driver of recent margin expansion, a reason we think the degree of expansion should likely slow down.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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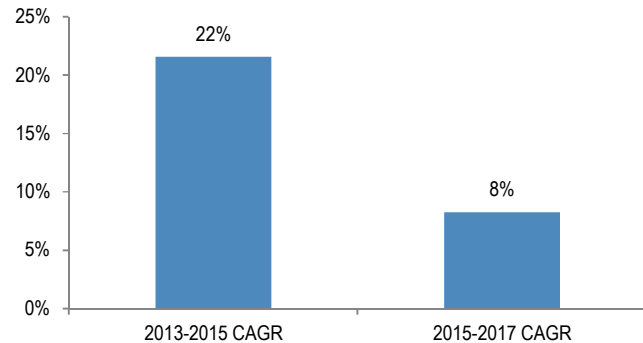
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Figure 70: GE AGP upgrades CAGR



Source: Company reports and J.P. Morgan estimates.

Figure 71: GE Commercial Spares CAGR

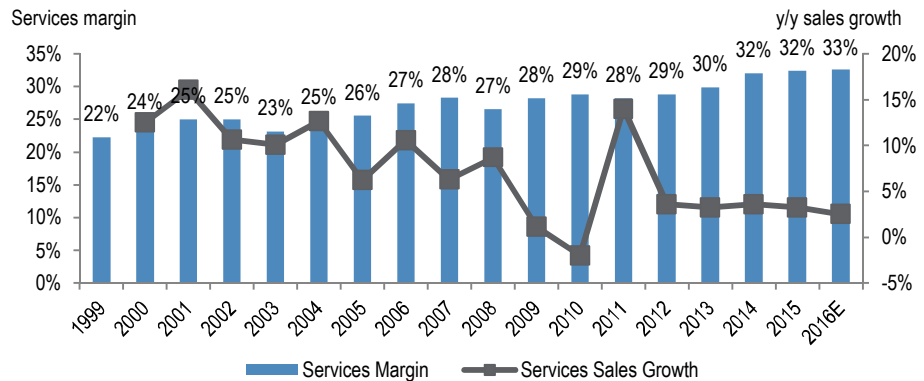


Source: Company reports and J.P. Morgan estimates.

GE CIO has said the company employs 20K software engineers and has hired 2,000 in the past 24 months. They are planning on getting rid of 7,000 contractors and hire back 3,000 employees to in-source work they had previously given away to third parties.

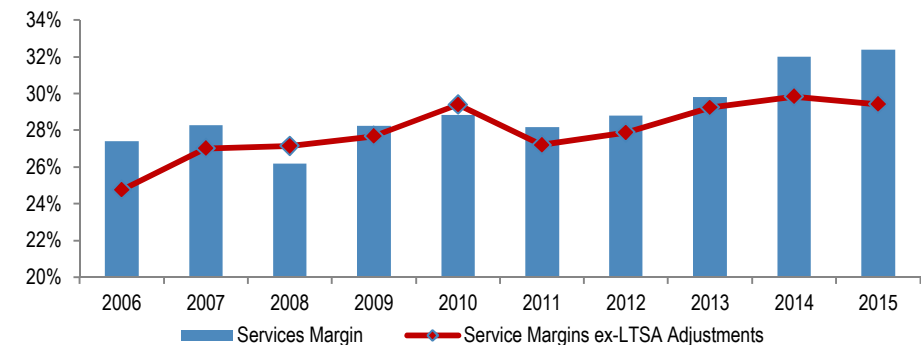
Assuming normal 40% incrementals for Service on the 3% revenue growth, we see potential for 20-30bps of margin expansion y/y. This could see upside, judging from the strong ~50-100% incrementals in recent years, driven by LTSA contract adjustments which, again, are difficult to forecast. Its important to note that while Digital is growing, heavy investment means margins are in line with the average, according to a recent presentation from GE's CIO.

Figure 72: Services Margin (ex-ALO)



Source: Company reports and J.P. Morgan estimates.

Figure 73: Services Margin Reported and ex-LTSA Adjustments (ex-ALO)



Source: Company reports and J.P. Morgan estimates.

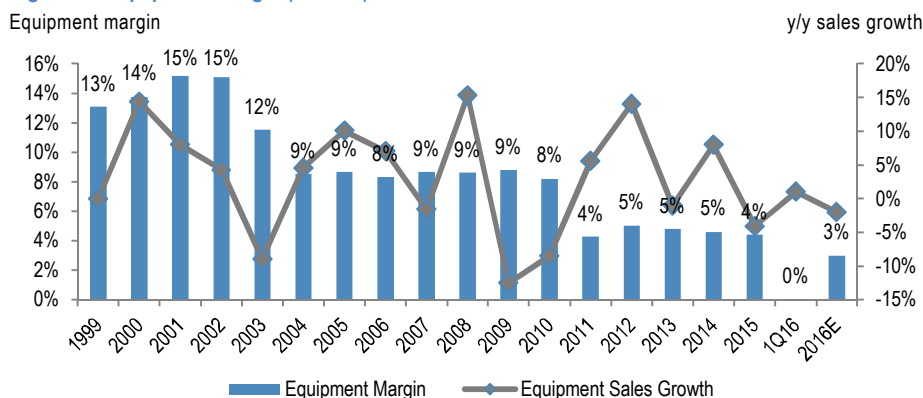
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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The key debate, however, is with regards to OE, where management has talked about growing equipment margins from the 2014 levels of 5%. We see numerous headwinds to margins here entering 2016 and likely into 2017/2018 as well. GE participates in competitive businesses, from Gas Turbines to Aircraft Engines to Diagnostic Imaging to Subsea equipment. Over the past fifteen years, Equipment revenue at GE (ex-NBCU) has gone from ~\$46B in 2001 with a ~15% margin to a 4-5% margin in 2015 despite \$15B more in revenue. Note 1Q16 equipment margins were close to breakeven.

Figure 74: Equipment Margin (ex-ALO)



Source: Company reports and J.P. Morgan estimates.

We currently model Equipment revenues to decline 2% y/y in 2016, and while this looks optically favorable, we see mix impacts within the Equipment revenue base driving a potential decline in margins here, which is negative for the bottom line GE Industrial segment margin. For perspective, the swings in Wind and Gas Turbines alone represented a ~20-30 bps mix impact in 2012 (assuming that GTs are just below the OE average). Similarly from 2010-2012, GE Aviation margins were flattish driven by negative mix impacts from the GENx ramp, offsetting the strong pricing gains during that period. Given the lack of equipment margin data in each segment, we look at a high level at the potential for mix impacts at some of the more relevant ones, particularly Aviation, Power and Oil & Gas.

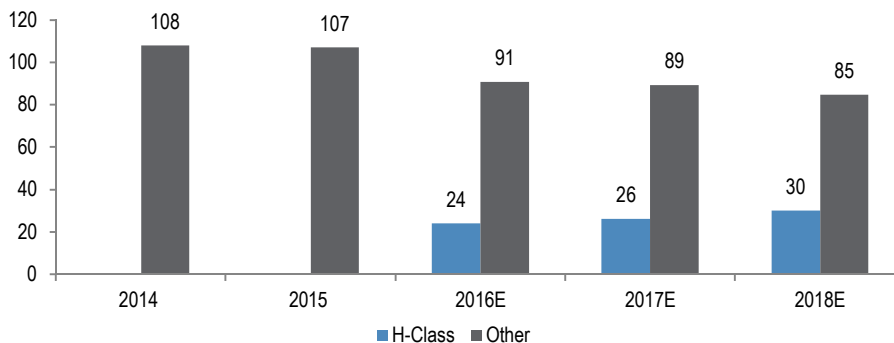
Power – Our conversations with management suggest that Thermal Equipment profitability is likely to remain flattish in 2016 vs 2015 levels given the ramp in H turbines. Specifically, for H turbines, management sees ~\$300mm of negative profitability in 2016 (more 1H weighted) due to the ramp (which includes initial launch costs and product costs, with the learning curve improving through 2017/2018). However, we note that coming up the learning curve helps the gross margins more than the operating margin overall as there are still continued costs that go through the SG&A line related to NPIs, factors costs, testing (basically other launch related costs).

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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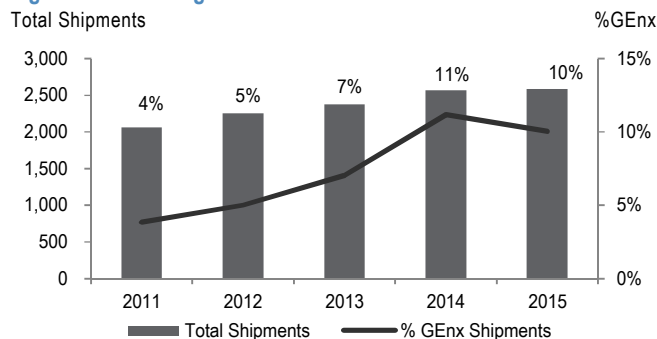
Figure 75: Gas Turbine Shipments



Source: Company reports and J.P. Morgan estimates.

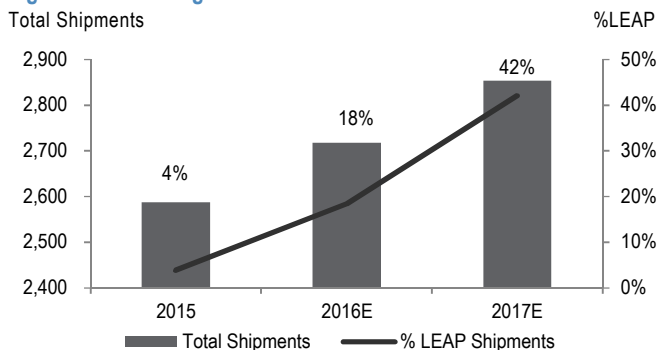
Aviation – This segment also has visible pressures from an equipment margin perspective, with high likelihood of negative OE margins in 2017 driven by the LEAP ramp. To provide perspective, we look at Aviation margins during the initial GENx ramp and see that margins had a similar negative mix impact. Its also important to note that while GENx was an incremental headwind on its own, what differentiates is the fact that the LEAP is replacing the CFM56, the most successful engine in history and the most profitable.

Figure 76: GENx Engine Mix



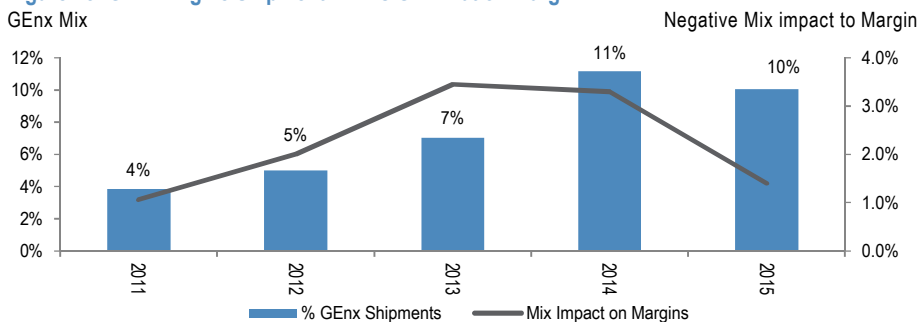
Source: Company Reports, J.P. Morgan Estimates

Figure 77: LEAP Engine Mix



Source: J.P. Morgan Estimates

Figure 78: GENx Engine Shipment Mix vs GE Aviation Margin



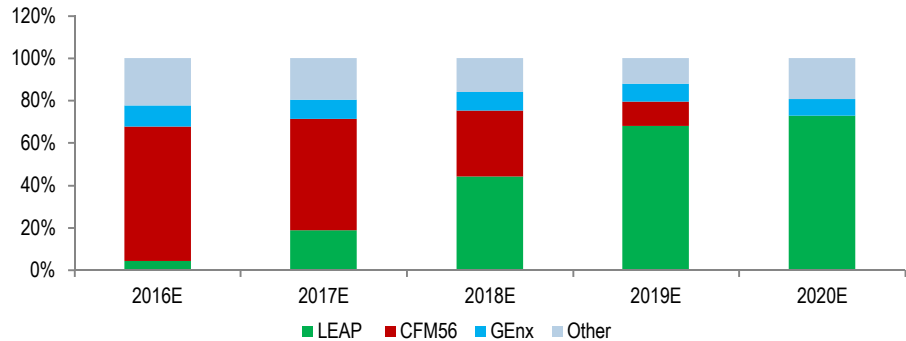
Source: Company Reports, J.P. Morgan Estimates. Mix impact calculated from 10-Ks filings commentary

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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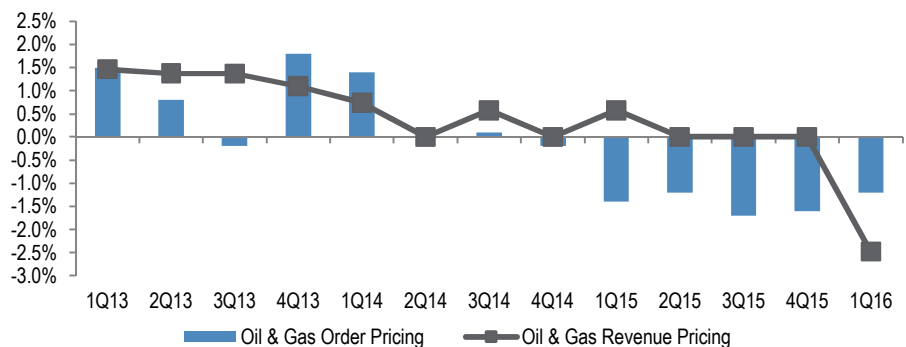
Figure 79: GE Engine Shipment Mix As Per Bottom Up Delivery Model



Source: J.P. Morgan estimates.

Oil & Gas – This is probably the most opaque segment, with little detail on margins across different sub-segments here. GE hasn't seen a lot of margin erosion yet, given the company is still fulfilling longer cycle backlog orders which have had solid pricing trends with little repricing. Coupled with the impact of accelerated restructuring driven saves, 2015 was a solid year optically. However, we see increased pressure in 2016 as productivity saves slow and weak orders, along with negative pricing trends, start flowing through.

Figure 80: GE Oil & Gas Equipment Orders Pricing



Source: Company reports and J.P. Morgan estimates.

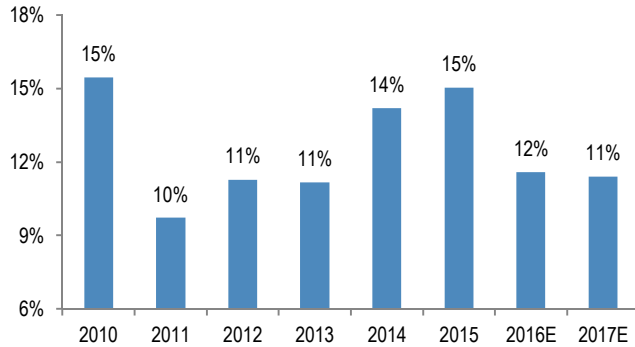
GE Oil & Gas is a mix of short cycle and long cycle, with majority of the exposure outside US. The Surface sub-segment is GE's most US exposed short cycle business, and revenue trends there were weak through 2015. The key pressure point as it relates to 2016/2017 is at Drilling/Subsea, a long cycle business with minimal margin pressures as of yet. In fact, margins may have increased here in 2015 if we go by trends at peers. However, judging by results at peers such as DOV's Energy segment, as well as FTI's expected 2016 margin trajectory using assumptions from the JPM Oil Services analyst Sean Meakim, margin pressures are likely to be severe in 2016 and 2017.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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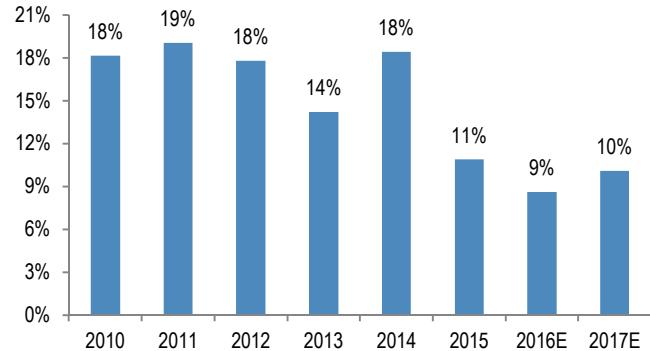
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Figure 81: FTI Subsea segment Operating Margin Forecasts (JPM)



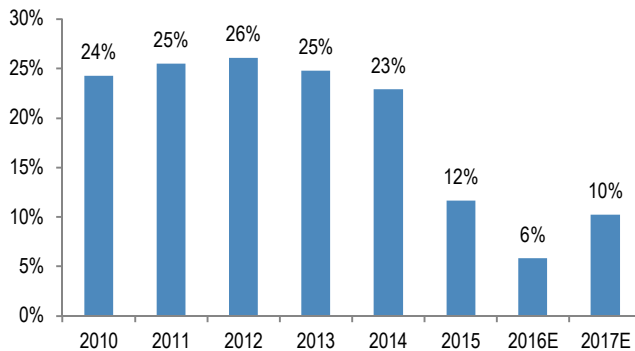
Source: Company reports and J.P. Morgan estimates.

Figure 82: FTI Surface Operating Margin Forecasts (JPM)



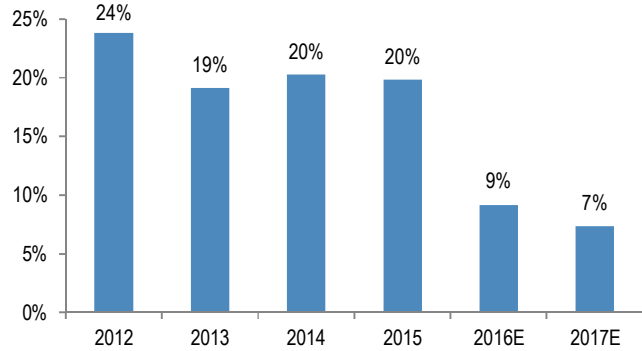
Source: Company reports and J.P. Morgan estimates.

Figure 83: DOV Energy segment Operating Margin Forecasts (JPM)



Source: Company reports and J.P. Morgan estimates.

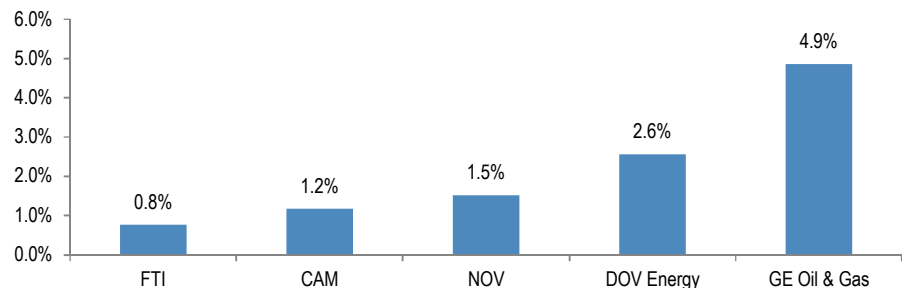
Figure 84: NOV Rig Systems Operating Margin Forecasts (JPM)



Source: Company reports and J.P. Morgan estimates.

Positively, GE's restructuring has been aggressive, which is the prudent thing to do, with a magnitude that is higher than peers like FTI and DOV. This suggests margins won't necessarily fall as far as others. However, we believe the savings from these actions will not be enough to offset all of the headwinds from pricing, combined with the high decrements on core volume declines. Indeed, the company will have already booked significant savings in 2015/2016, leaving limited offset to potential declines in 2017, when orders convert with more severe price pressures

Figure 85: GE Restructuring vs Oil/Gas Peers (Cumulative 2014+2015 restructuring/2015 sales)



Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 64: Oil & Gas Segment Margin Bridge

	2015	2016E	2017E	2018E
Sales Start	19,085	16,450	13,149	11,884
Core	(885)	(2,808)	(1,265)	36
Price	0	(500)	(250)	0
Volume	(885)	(2,308)	(1,015)	36
Acquisitions	(150)	(90)		
Forex	(1,600)	(403)	0	0
Other				
Sales End	16,450	13,149	11,884	11,920
OP Start	2,758	2,427	1,512	1,194
Core	(129)	(1,431)	(568)	7
Price	0	(500)	(250)	0
Volume	(129)	(931)	(318)	7
Mix + Productivity	50	600	250	50
Inflation	50			
Acquisitions	(23)	(14)	0	0
Forex	(280)	(71)	0	0
Other				
OP End	2,427	1,512	1,194	1,252
Margin	14.8%	11.5%	10.1%	10.5%

Source: Company Reports, J.P. Morgan Estimates. *2014 onwards reported as mix, prior to that reported as productivity ex-restructuring saves estimated by JPM

Alstom Impact – Finally, looking at Alstom, we see this business as being highly dilutive to both overall and Equipment margins. As highlighted earlier, the business is currently running below breakeven levels, and with service margins generally higher than equipment, this implies negative equipment margins currently. This is a big negative for mix in the near term.

Table 65: Alstom Mix Impact

	2014	2015	2016E	2017E	2018E
Total Industrial Segment Revenues ex-Alstom	109,726	106,840	102,242	101,323	105,026
Total Industrial Segment Profits ex-Alstom	17,764	18,120	17,421	18,213	19,132
Margin ex-Alstom	16.2%	17.0%	17.0%	18.0%	18.2%
Total Industrial Segment Revenues	109,726	108,796	116,592	115,958	119,908
Total Industrial Segment Profits	17,764	17,966	18,070	19,499	21,120
Margins	16.2%	16.5%	15.5%	16.8%	17.6%

Source: Company reports and J.P. Morgan estimates.

R&D likely stable in 2016/2017

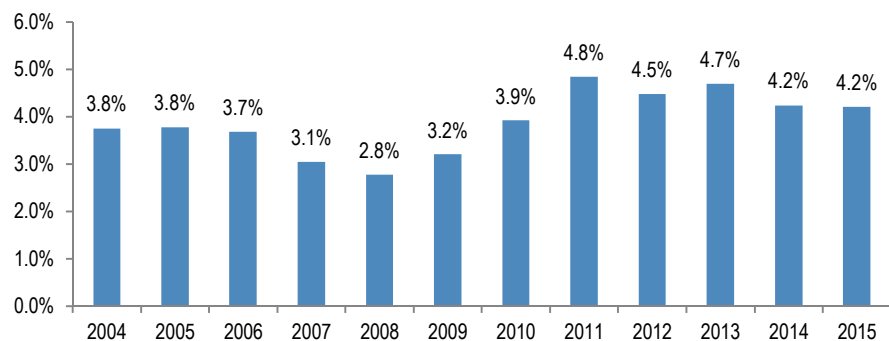
A look at R&D as a percentage of sales shows a nice increase from the bottom in the middle of last decade, now at 4-4.5% versus a trough of ~3%. While 4.5% is higher than history, we do not think GE is "over-spending" versus peer investment levels. GE spends ~5%/sales (including customer funded R&D) on average in the key segments of Aviation, Power, and Oil & Gas, which is higher than the EE-MI average but in line with high quality peers such as MMM, DHR, and HON. Management raised spending in Healthcare and Oil & Gas in 2H15, with increased spending in Healthcare expected to continue into 1H16, suggesting no major near-term pause here.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 86: GE R&D/Sales



Source: Company Reports. Excludes Customer Funded R&D

Table 66: R&D/Sales for GE Segments

	R&D/Sales
Total GE (2015)	5%
Healthcare (2015E)	6%
Aviation (2015E)	9%
Power (2016E)	3%
Oil/Gas (2013)	3%
Aviation, Power, Oil & Gas, HC	5%
Average (DHR, MMM, HON)	6%

Source: Company Reports, J.P. Morgan estimates. Aviation includes customer funded R&D

Table 67: R&D/Sales Peers

Company/Division	2014
Healthcare	
Philips	8%
Siemens	9%
Lighting	
AYI	2%
Transportation	
CAT	4%
Aviation	
HON	4%
COL	10%
UTX Pratt & Whitney	8%
Power & Water	
Alstom	4%
MHI	4%
Siemens	3%
Wartsila	3%
Oil & Gas	
CAM	1%
SLB	3%
HAL	2%
DOV	2%
FTI	2%

Source: Company Reports. Excludes customer funded R&D for HON and COL

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Margin Entitlement

As shown in the tables here, GE doesn't appear to be under earning in its key businesses. This suggests there is probably not a lot of low hanging fruit. Therefore, margin expansion will depend more on volume leverage, including execution on new product launches, and competitive conditions across these markets.

Table 68: Power Segment Margin vs Peers

Siemens <i>Power & Gas</i>	12%
MHI <i>Energy & Environment</i>	10%
Harbin Electric <i>Thermal</i>	12%
Shanghai Electric	7%
CAT <i>Power</i>	19%
Average	12%
GE	21%

Source: Company reports and J.P. Morgan estimates.

Table 69: Oil & Gas Segment Margin vs Peers

FTI <i>Subsea</i>	15%
FTI <i>Surface</i>	11%
DOV <i>Energy</i>	12%
CAM	15%
Average	13%
GE	15%

Source: Company reports and J.P. Morgan estimates.

Table 70: Aviation Segment Margin vs Peers

Rolls Royce	12%
MTU Aero Engines	9%
Safran	13%
UTX <i>P&W</i>	13%
HON <i>Aerospace</i>	21%
Average	14%
GE	22%

Source: Company reports and J.P. Morgan estimates.

Table 71: Healthcare Segment Margin vs Peers

Hologic	33%
Varian Medical	18%
Abbott Labs	16%
Baxter	13%
Siemens <i>Healthcare</i>	18%
Philips <i>Healthcare</i>	8%
Becton, Dickinson and Co	21%
Boston Scientific	14%
Average	18%
GE	22%

Source: Company reports and J.P. Morgan estimates.

Table 72: Renewables Segment Margin vs Peers

Vestas	11%
Gamesa	9%
Goldwind	11%
Average	10%
GE	7%

Source: Company reports and J.P. Morgan estimates.

Table 73: Lighting Segment Margin vs Peers

AYI	14%
Hubbell <i>Electrical</i>	12%
Phillips	7%
Average	11%
GE	7%

Source: Company reports and J.P. Morgan estimates.

Next, we take a deep dive into individual segment revenue and profit dynamics from 2016-2018.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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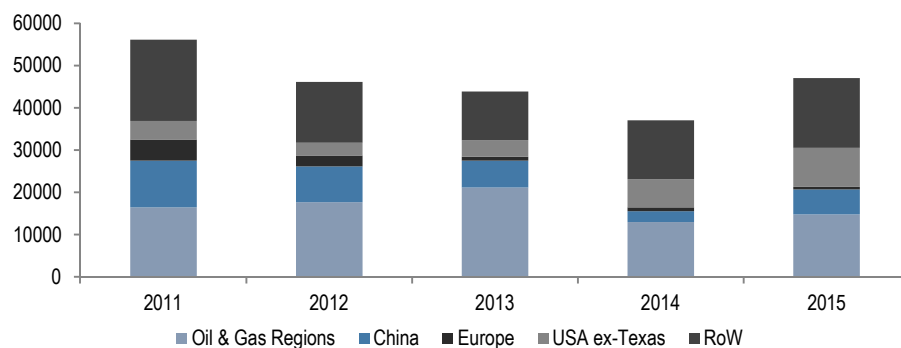
Power – Profits Impacted by HA Mix Near Term; Continued Services Growth Key

This segment is likely to be the biggest area of debate, given various macro and industry specific dynamics related to the US gas cycle, AGPs (including newer upgrades), and Alstom. Key moving parts underlying our revenue growth assumptions for 2016 are (1) gas turbine shipments of 115 units, up ~5% y/y, in line with guidance, with revenue growth exceeding shipments due to H turbine mix, (2) Aero-derivative shipment declines (~30% y/y) due to sluggish industrial activity and exposure to resource rich regions, and (3) continued strength in Thermal services coupled with strong growth in AGP/AGP-like upgrades. For 2017, the dynamics are expected to stay similar on net, with down gas turbines but increasing H turbine mix, a more normalized, lower level of Aero-derivative shipments, and continued growth in services driven by upgrades. On profits, mix is the key debate, which we see as net neutral into 2016, as tailwind from continued strong services growth gets offset by equipment dynamics, including Alstom (2015 saw ~\$100mm in mix impacts despite service revenues up ~10% y/y). We start by a quick overview of the macro backdrop before delving into the sub-segment dynamics

Quick Macro Backdrop

GE for the next five years expects an annual market of 50-55GW for turbines >30MW, steady at the current level (note that the chart below shows historical data for GT orders >100MW). GE also expects the share of H turbines to go to 50% from 1/3 currently. As also shown in the chart below, the overall market is highly dependent on oil exporting countries, accounting for more than 1/3 of activity, a potential risk going forward given depleting government budgets.

Figure 87: Global orders for gas turbines >100MW
GW



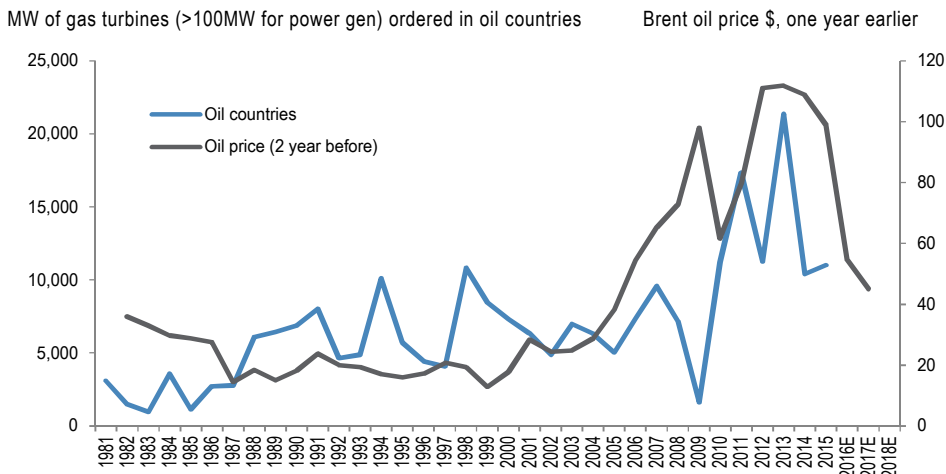
Source: McCoy, JPMorgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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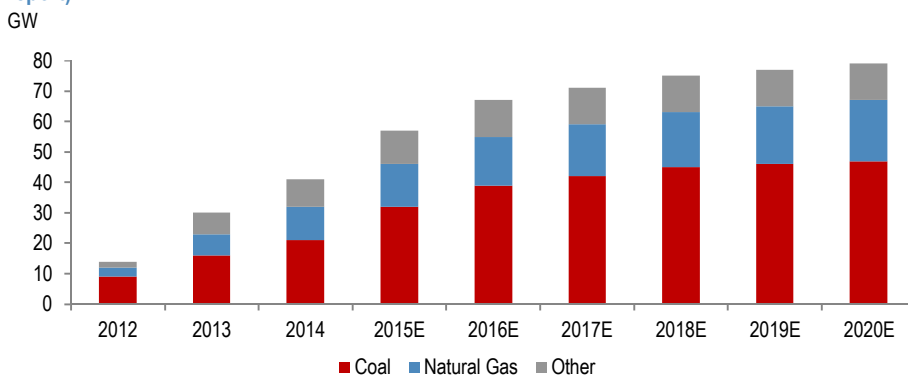
Figure 88: Lower oil price could put pressure on infrastructure spending in oil exporting countries



Source McCoy, JPMorgan estimates. Bloomberg.

Looking regionally, starting with US, demand has been solid driven by the ongoing replacement of coal. As per the latest US LTRA report, natural gas generation capacity is projected to rise 10%, or by 42 GW, by 2019, with 97 GWs of new gas fired units to come online by 2025, while non-hydro renewable resources are expected to increase from 33 GW in 2015 to 40 GW. Between 2012 and 2025, about 85 GWs of capacity are expected to be retired. Coal retirements will continue with ~21 GW of coal-fired units retired between 2012 and 2014, and another 27 GW by 2025. On the gas side, from 2012 to 2014 there were 11 GW of retirements, and an additional 10 GW are scheduled to retire by 2025. From a timing perspective, annual coal retirements have grown at a ~60% CAGR from '12-'15, with expected growth to just ~10% CAGR between '15-'18. Cumulative coal retirements will peak out in 2020 at ~55 GW, with the annual increment peaking in 2018 at ~1GW/year, with 15 the biggest y/y increment on record at ~10 GWs or ~50% y/y growth, compared to ~7GW in 2014 and ~6GW in 2013.

Figure 89: NERC Cumulative Actual and Forecast Confirmed Retirements (Current, 2015 LTRA report)



Source: NERC

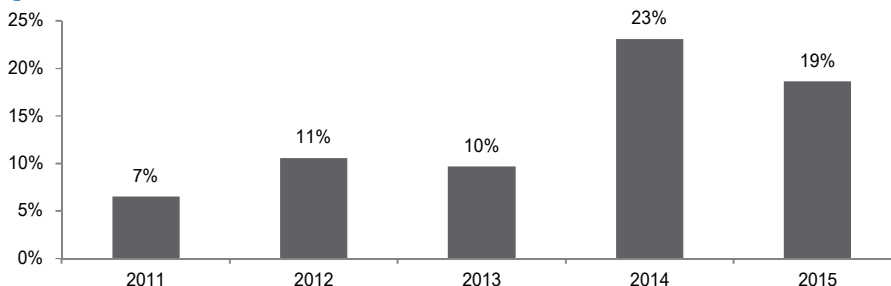
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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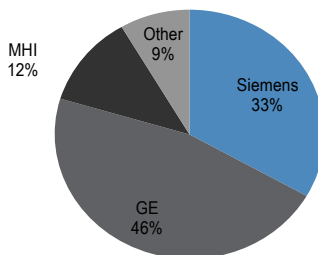
Since coal retirements started in '11 to date, there have been ~27 GWs of HDGTs ordered versus the estimate of ~31 GWs of coal retired showing we are well into the middle innings of this cycle. Indeed, in terms of orders as per McCoy, the US is currently ~20% of the global HDGT market vs <10% in 2011. We see GE taking the highest share here with ~45% followed by 33% for all >100MWs HDGTs shipped in US since 2011.

Figure 90: US Share of Global GTs Since 2011



Source: Company reports and J.P. Morgan estimates.

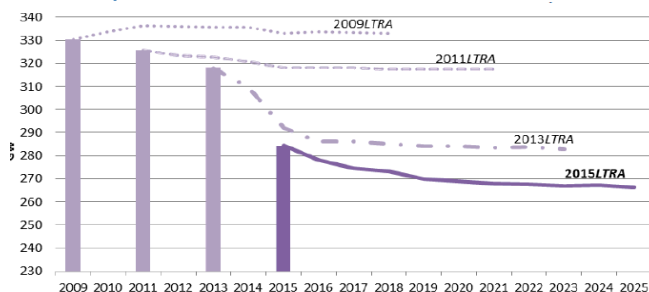
Figure 91: Market Share for GTs (>100MW) Shipped in US since 2011



Source: Company reports and J.P. Morgan estimates.

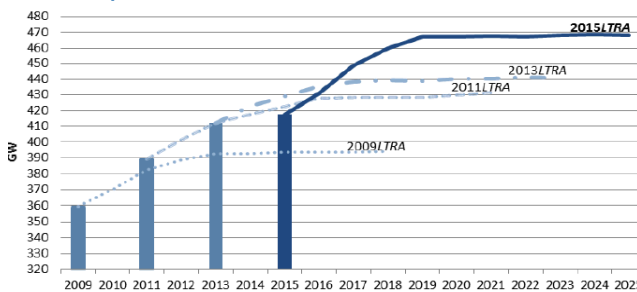
In total, the expected 460-470 GWs of natural gas capacity forecast by 2019. On renewables, large scale solar also got a significant boost from the recent spending bill, which extended the solar investment tax credit by five years, with the ITC remaining at 30% through 2018, before reducing to 26% in 2020, 22% in 2021, 10% in 2022, and phasing out in 2024.

Figure 92: NERC-Wide Coal-Fired Generation Outlook: 2009-2015 LTRA Comparison



Source: NERC, 2015 Long-Term Reliability Assessment.

Figure 93: NERC-Wide Gas-Fired Generation Outlook: 2009-2015 LTRA Comparison



Source: NERC, 2015 Long-Term Reliability Assessment.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

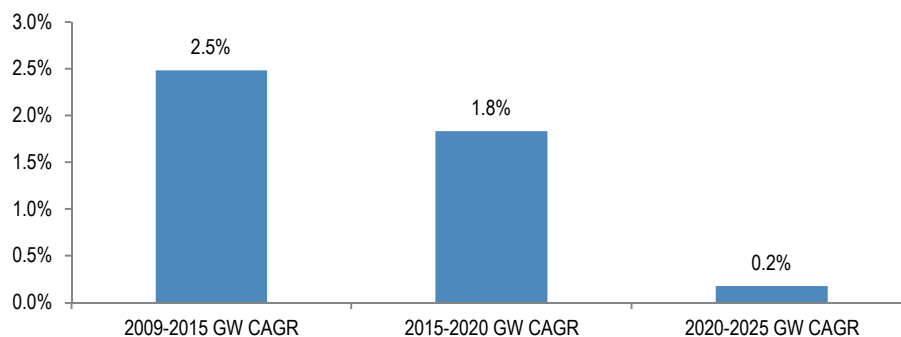
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However, we note that given disappointing load growth forecasts, the expected pace of capacity investments for gas over the next 5 years is now slower than prior (2009-2015). And looking out beyond 2020, the pace slows further. The bottom line is that, all in, we see US HDGT orders of about 9MWs on average over the next few years. This would represent a slight slowing versus the dramatic y/y growth seen in the prior 3 years.

Figure 94: NERC Gas Fired Generation Outlook

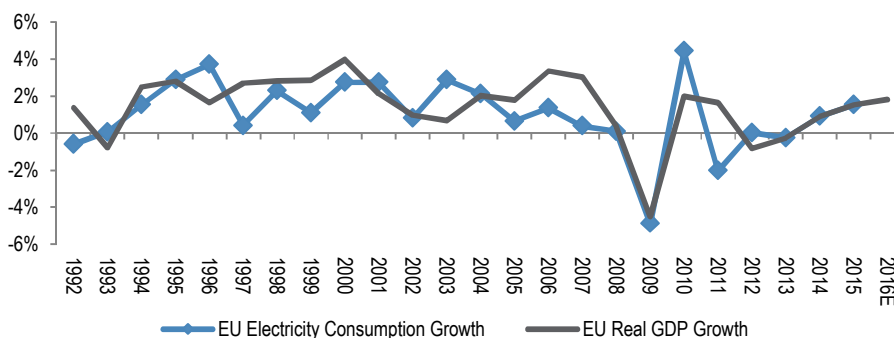
GW CAGR



Source: NERC

Outside the US, demand growth for electricity in Europe continues to remain in the negative territory this decade driven by sluggish GDP growth and increasing efficiency levels. Unlike US utilities, European utilities do not face significant regulatory drivers to retire coal plants in the near term, and we do not see any major drivers on the horizon for a recovery in power generation orders in Europe.

Figure 95: EU-28 Electricity Consumption vs GDP Growth



Source: EIA, J.P. Morgan Economics

ENTSOE (*European Network of Transmission System Operators for Electricity*) in its scenario outlook for Europe sees annual monthly peak loads increase over the period 2016–2025 by 0.9%, with fossil fuel-based capacity expected to fall after 2016 and along with this general decrease of fossil fuel capacity, gas-fired power. In their “best estimate” scenario, they see total gas capacity increase of ~22 GW by 2025 (annual growth of 1.13%), with renewables having a dominant role in new capacity adds in upcoming years. Below, we recap the standing investment plans for the major European utilities. Based on commentary from utilities, most of the

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

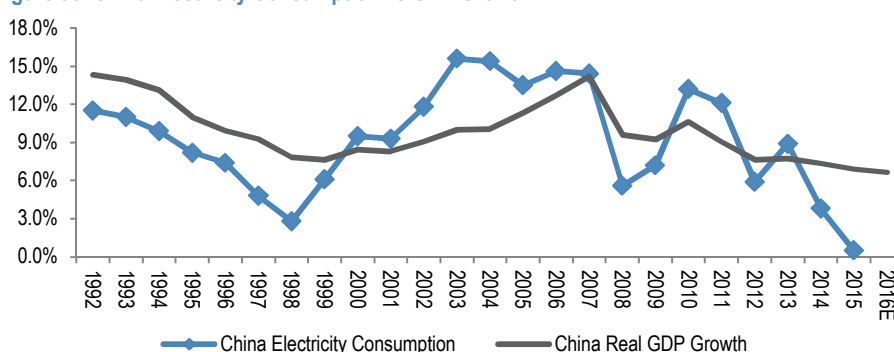
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spending is expected to be concentrated on renewables (wind/solar) and maintenance of existing power gen equipment and upgrading distribution networks.

In other international markets, Mexico and some Latin American countries show a number of potential projects. China, on the other hand, has moved to the right. Specifically on China, while GDP growth is a key indicator of electricity consumption, this has sharply decoupled over the last two years with consumption decelerating at a much faster pace. Electricity consumption growth last year was at its lowest level in last 25 years, barely positive at ~0.5% y/y, a continuation of a sharp slowdown since 2013.

Figure 96: China Electricity Consumption vs GDP Growth



Source: J.P. Morgan Economics

As per our China infra analyst, capacity additions are expected to decelerate to ~7% y/y in 2016 and 6.5% in 2017 from 11% in 2015, with a 2015-2020 CAGR of ~5% compared to ~10% from 2010-2015. Looking at the mix of installed capacity, growth is expected to come primarily from Wind and Solar which are expected to contribute ~50% to capacity growth through 2020, with ~25% from Hydro, ~20% from Coal, ~5-10% from Nuclear, and the remaining 0-5% from Gas.

Table 74: China Power Projection – Year-end installed capacity

Total capacity installed, end –year (MW)	2010	2011	2012	2013	2014	2015	2016E	2017E	2018E	2019E	2020E	2010-15 CAGR %	2015-20 CAGR %
Hydro	2,161	2,330	2,489	2,800	3,018	3,104	3,304	3,504	3,704	3,904	4,104	7.5%	5.7%
Coal	6,833	7,146	7,581	8,194	8,605	9,329	9,679	9,979	10,079	10,129	10,179	6.4%	1.8%
Nuclear	108	126	126	146	199	272	357	452	463	508	631	20.2%	18.3%
Gas	264	338	383	431	557	664	699	716	733	751	768	20.2%	3.0%
Wind	296	462	608	755	958	1,283	1,553	1,823	2,063	2,303	2,543	34.1%	14.7%
Solar & others	3	195	231	148	265	416	566	736	906	1,056	1,206	171.9%	23.7%
Total	9,664	10,596	11,418	12,474	13,602	15,067	16,158	17,210	17,948	18,650	19,431	9.3%	5.2%
Y/Y Growth %		9.6%	7.8%	9.2%	9.0%	10.8%	7.2%	6.5%	4.3%	3.9%	4.2%		

Source: J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 75: China Power Projection –Annual Capacity Additions

Annual capacity additions (MW)	2010	2011	2012	2013	2014	2015	2016E	2017E	2018E	2019E	2020E
Hydro	16,430	10,806	16,760	29,930	21,800	16,080	20,000	20,000	20,000	20,000	20,000
Coal	57,070	57,872	49,890	32,490	38,440	57,030	35,000	30,000	10,000	5,000	5,000
Nuclear	1,740	1,750	-	2,210	5,470	7,240	8,578	9,436	1,086	4,505	12,308
Gas	1,240	2,590	2,470	4,010	9,460	6,960	3,480	1,740	1,740	1,740	1,740
Wind	14,570	13,486	12,960	14,060	21,010	29,610	27,000	27,000	24,000	24,000	24,000
Solar & others	200	(605)	1,070	11,300	8,250	12,820	15,000	17,000	17,000	15,000	15,000
Total	91,250	85,899	83,150	94,000	104,430	129,740	109,058	105,176	73,826	70,245	78,048

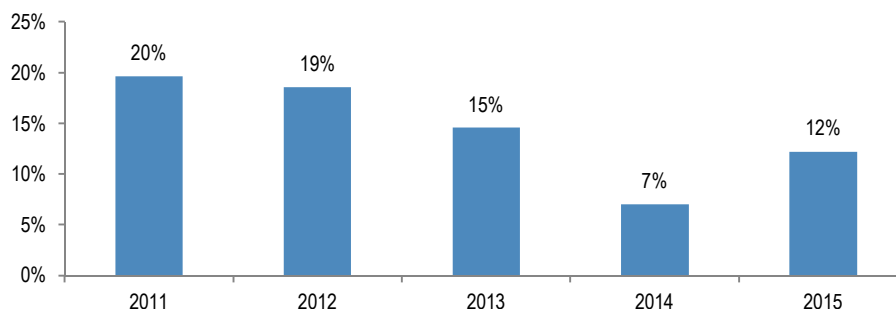
Source: J.P. Morgan estimates.

Table 76: Annual Capacity Additions (% of Type)

Capacity addition in a year (% BD)	2010	2011	2012	2013	2014	2015	2016E	2017E	2018E	2019E	2020E
Hydro	18%	13%	20%	32%	21%	12%	18%	19%	27%	28%	26%
Coal	63%	67%	60%	35%	37%	44%	32%	29%	14%	7%	6%
Nuclear	2%	2%	0%	2%	5%	6%	8%	9%	1%	6%	16%
Gas	1%	3%	3%	4%	9%	5%	3%	2%	2%	2%	2%
Wind	16%	16%	16%	15%	20%	23%	25%	26%	33%	34%	31%
Others	0%	-1%	1%	12%	8%	10%	14%	16%	23%	21%	19%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: J.P. Morgan estimates.

Figure 97: China HDGT MW Share (>100 MWs)



Source: McCoy, J.P. Morgan Estimates

Competitive Dynamics Net Negative: We also believe that competitive dynamics in this industry remain net negative despite the Alstom transaction. Siemens Egypt win in 2015, in which management highlighted immediate delivery/favorable terms as a driver of that deal, is evidence of the competitive nature of this global market beyond just price and challenging cash dynamics in the industry (inventory requirements). Even in consolidation, the concessions on Alstom have strengthened the #4 competitor, Ansaldo Energia, who believes that the acquired technology will allow it to grow its revenues 2x over the next five years. GE management's long-term goal is to continue to gain share in a flat GW market globally. Looking at recent pricing commentary, Siemens talked about a difficult market due to price but noted that its easing a bit. GE however, is seeing relatively solid pricing in their H-turbine frame, through we are not clear if this is still coming off a low base (something to watch closely in forward quarters). MHI on their recent earnings call talked about seeking

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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opportunities to gain share in North America, and highlighted that there is no significant change in the pricing environment in the region.

Sub-segment revenue dynamics

Moving into sub-segment revenue dynamics, we look at growth potential across the Gas Power equipment business (which includes Aero-derivatives), the combined services business including AGP/AGP-like upgrades and Alstom. We see services growth as the key driver of revenue from 2016-2018 and also the key profit driver. While equipment revenue growth should be significantly higher than services in 2016 driven by the H launch, we see this normalizing in 2017/2018. Aero-derivatives, on the other hand, are likely to see significant headwinds this year before normalizing at a lower level in 2017/2018. We provide a summary sub-segment revenue model below before delving into a detailed review.

Table 77: Power Segment Revenue Growth Dynamics

	2015 Revs (JPMe)	% of sales	2016E Y/Y	2017E Y/Y	2018E Y/Y
Services/other	13,279	62%	8%	5%	4%
Gas Power Equipment (HDGTs, Steam)	5,574	26%	23%	2%	1%
Aero-derivate Equipment	1,720	8%	-29%	0%	0%
Alstom	917	4%			
Overall			+9%	+4%	+3%

Source: Company reports. Alstom part of organic from 2017 onwards

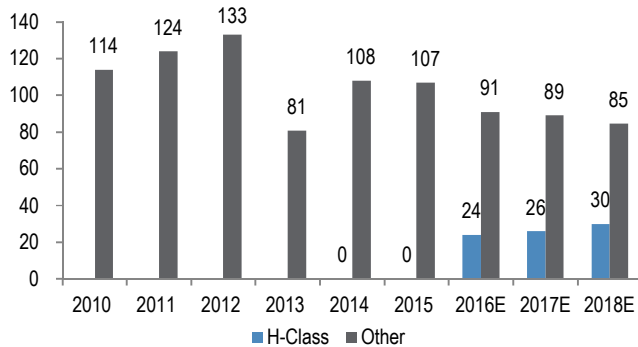
Gas Power (HDGTs, Steam turbines, Aero turbines) - Flat GW market with potential share gains: Gas power equipment, including Aero-derivative shipments, represents ~35% of segment revenue, and the current market can best be characterized as flattish. Note this segment now includes the Aero turbine business (<100MW GTs). GE currently expects to ship 24 H turbine units in 2016 and 115 turbines in total, up ~5% y/y, which means from a MW perspective GE sees strong growth y/y, supported by the strong growth in turbine orders in 2015, which were up ~40% y/y. Management sees continued strength in F turbines driven by SE Asia and Middle East regions. Moving beyond 2016, shipment growth is a TBD and dependent on order trends in 2016. 1Q orders were solid to start the year, and the backlog stands at ~101 for delivery in 2016, showing about between 6-9 months lead times. Management noted that they have orders in backlog for beyond 2017, and they expect to build the 33 turbine H backlog y/y by the end of 2016. We could see orders growth on a dollar basis in 2017, but unit shipments should likely be down given increasing higher-MW H turbines in the mix. Finally, on Aero-derivative turbines which is a ~\$5B business (including service) trends have weakened significantly, with orders of just '2' units (5 units shipped) in 1Q vs 86 units shipped for all of 2015. This business can be lumpy and is driven primarily by demand in emerging markets. While there is long-term potential for growth in these areas, it is heavily impacted in the near term due to lower oil prices and the impact on oil linked economies and industrial activity in general. We also believe that recent order trends at Siemens suggest some share loss for GE on the Aero-derivative front.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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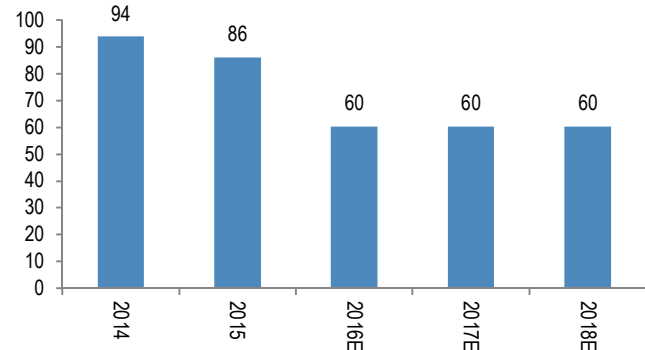
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Figure 98: GT Shipments



Source: Company reports and J.P. Morgan estimates.

Figure 99: Aero-derivative Shipments

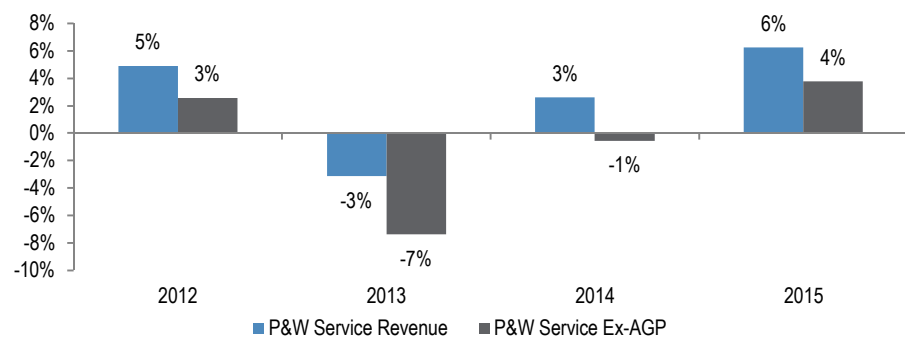


Source: Company reports and J.P. Morgan estimates.

AGP/AGP-like upgrades key to growth sustainability

Power Services: AGPs a continued upside driver + newer upgrades: Thermal Services represents ~50% of the overall Power segment (this segment also includes the service side of Jenbacher engines and Waukesha), and organic revenues were solid in the double digit growth range in 2015 (up MSD-HSD including FX impacts, as shown in the chart), largely driven by ~30% y/y growth in AGP upgrades. The product content here is classified as 'Digital' and has likely been significantly beneficial to the margin mix as well. Looking at service growth ex-AGPs (assuming ~\$15mm per AGP upgrade as per management commentary), the non-AGP services revenue was up low to mid-single digits, suggesting that continued growth in AGPs will be key to above average growth in forward years.

Figure 100: Power & Water Service Revenue Growth including and excluding AGPs



Source: Company reports and J.P. Morgan estimates. For 2015, we have made an assumption based on prior segmentation for comparability services

Moving into 2016, management sees continued strong growth here, targeting 125 upgrades for the year, up ~20% y/y, supported by solid 2015 order trends. There are other upgrade services, such as 'Dry Low NOx', that supplement growth. All-in, there were ~275 such upgrades shipped in 2015 (including AGPs), and 1Q had ~55 shipments, flattish y/y. Looking back, its no coincidence that the strong pickup in AGP upgrades comes from the installed base aged during the upgrade bubble in 1998-2002. Parsing through the publicly announced AGP awards as highlighted in the table below which has ~65-70 AGP awards listed, we notice that almost all of them are for GTs that are approaching ~10-15 yrs in service and particularly the F Class turbines.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 78: Specific Examples of AGP Upgrades

Utility	Type	Upgrade Project	Cost (\$ in millions)	Per turbine	GT Award Year	GT Operational Year
PSEG	General Electric GE 7FA.03 natural gas-fired turbines	AGPs for 3 combustion turbines at Bethlehem Energy Center	\$50	\$17	2002	2005
PSEG	NA	AGPs for 2 CTs at PSEG's Bergen Generating Station in Ridgefield, NJ	\$48	\$24	1999	2002
PSEG	NA	AGPs for 4 CTs at the PSEG Linden Generating Station	\$69	\$17	2000	2006
SDG&E	GE 7A CTGs, each rated at 165MW at 62F	AGPs for 2 combustion turbines at Generation Plant Palomar	\$30	\$15	2001	2006
Duke Energy Carolinas, LLC	NA	BUCK 11 HOT GAS PATH INSPECTION WITH 32K - AGP UPGRADES	NA	\$17	2002	2011
Duke Energy Carolinas, LLC	NA	BUCK 12 HOT GAS PATH INSPECTION WITH 32K - AGP UPGRADES	NA	\$17	2002	2012
Tiverton	NA		NA	\$15	1998	2000
SCE	Four GE 7FA.03 units, two D-11 steam turbines and associated generators in combined cycle	AGPs for 4 CTs at Mountainview Generating Station	NA	NA	2000	2005
Wisconsin Public Service Corp	Two GE 7FB.01 units, equipped with Dry Low Nox (DLN 2.4) combustion system	AGPs and other items for 2 CTs in Fox Energy Center	\$68	\$34		
Essential Power	Two GE 7FA combustion turbines with HRSGs	AGPs for 2 GE 7FA gas turbines at its Newington Energy site	NA	NA	2000	2002
Dominion	Four GE 7FA units	AGPs for GE 7FA gas turbines at its Fairless power plant near Philadelphia	NA	NA	2001	2004
Dominion	Two GE 7FA units	AGPs for GE 7FA gas turbines at its Possum Point plant in Virginia	NA	NA	2001	2003
Dominion	Two GE 7FA units	AGPs for GE 7FA gas turbines at its Bear Garden plant in Virginia	NA	NA	2002	2011
Dynegy	NA	Eight sets of AGP upgrades and GE's OpFlex* Peak Fire software for the fleet of 7FA.03 gas turbines at Dynegy's Hanging Rock Energy Facility and Washington Energy Facility in Ohio and the Fayette Energy Facility in Pennsylvania.	NA	NA	2000/2001	2002/2003
Dynegy	NA	Four sets of AGP hardware to boost output and enhancing compressor performance and reliability through the installation of new compressors and stators, at its Independence Energy Facility in Oswego, New York	NA	NA	NA	NA
KOSPO	Six AGPs	Six AGP systems at its Shin Incheon plant	NA	NA		
Calpine	Two AGPs	Maine	NA	NA	1999	2001
Calpine	Two AGPs	Pastoria plants in California	NA	NA	2000	2005
Calpine	Two AGPs	Los Medanos in California	NA	NA	1999	2001
IBERDROLA	Two AGPs	AGP upgrades on Two units at its Altamira V plants	NA	NA	2002	2005
IBERDROLA	Six AGPs	AGP upgrades on Six units at its TAMAZUNCHALE	NA	NA	200/2003	2003/2006
J. M. Barry Plant	Four AGPs	The solutions are expected to deliver a total output increase of more than 6 percent, which will equate to 40 more megawatts (MW) of power	NA	NA	1998/2001	2001/2003

Source: JPMorgan.

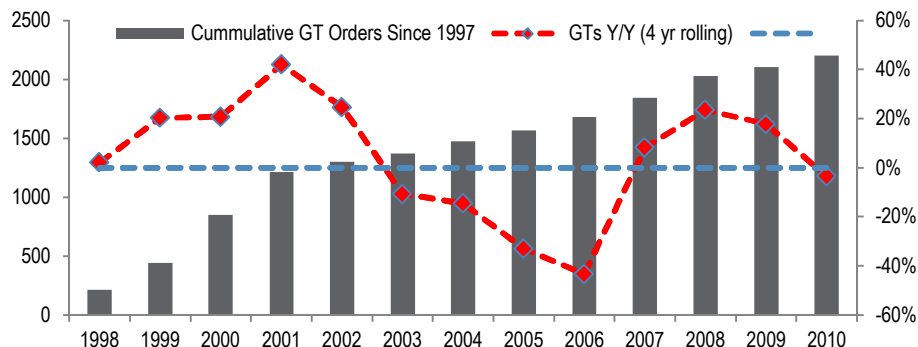
As per McCoy, GE received orders for ~1300 GTs from 1998-2002 of which ~700 were F Class. Looking at GT orders on a 4yrs rolling basis, order growth picked up dramatically in 1999-2001 before decelerating sharply into negative territory by 2003.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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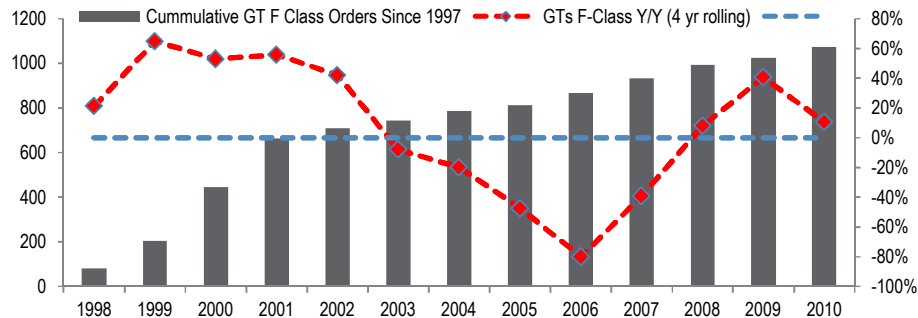
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Figure 101: GE GT Orders during the Bubble vs Y/Y GTs Orders



Source: McCoy, Company reports and J.P. Morgan estimates.

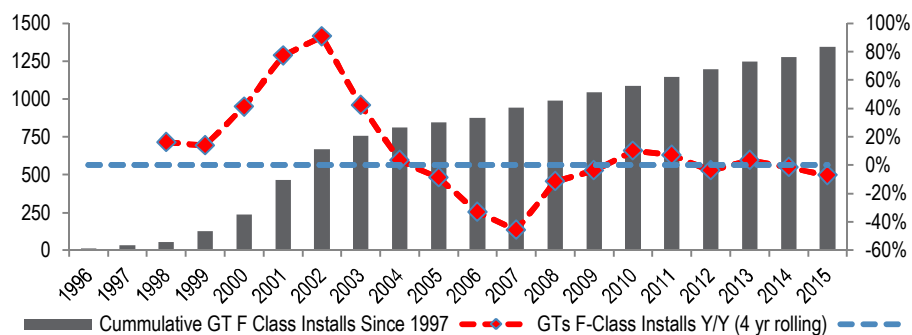
Figure 102: GE GT F Class Orders during the Bubble vs Y/Y GTs F-Class Orders



Source: McCoy, Company reports and J.P. Morgan estimates.

Looking at installs, as per McCoy, GE has installed ~600-650 F Class turbines globally during 1998-2002, and this number has barely doubled to ~1300 over the next 13 years.

Figure 103: GE GT F Class Installs during the Bubble vs Y/Y GTs F-Class Orders



Source: McCoy, Company reports and J.P. Morgan estimates.

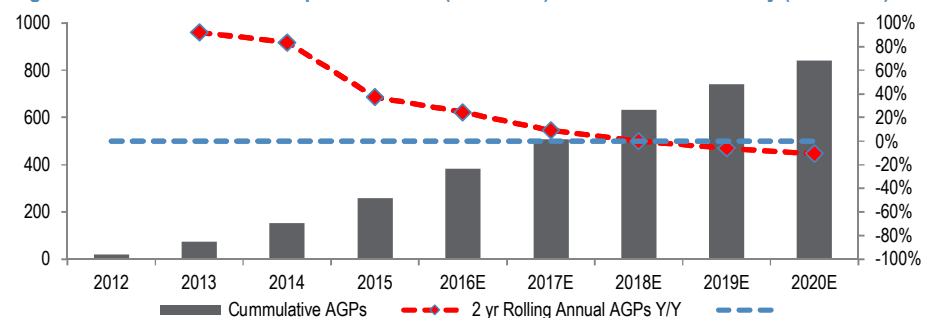
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Cumulative AGP upgrades touched ~257 units as of 2015, and are expected to reach ~385 by the end of 2016, the majority of which are F Class. The ~385 upgrades represent ~60% of F Class turbines installed during 1998-2002 (~600-650). Looking out to 2020, and widening the target market commensurately, this suggests ~800-850 in upgrade opportunities for the F Class turbines installed from 1998-2006. By this token, there could be an incremental ~400-450 upgrades from 2017-2020 versus the 385 cumulative expected to be done through 2016. On an annual basis this amounts to ~100-110, which would be a slowdown from current levels (125 expected in 2016). We note that GE has indicated that more AGP/AGP-like upgrades are in the pipeline that will be in market soon, as they go backward to B and E fleets, suggesting continued runway (not one and done with the F upgrades). While there is limited detail on timing, we have given them some credit for this in our AGP forecast (135 and 142 modeled in 2017 and 2018). However, taking a more conservative approach using the above math from F Class installs would imply a more significant slowing in growth, and declines toward the end of the decade.

Figure 104: Illustrative AGP Shipment Growth (2012-2020) on F Class Installs Only (1998-2006)



Source: Company reports and J.P. Morgan estimates.

While, we believe this upgrades activity is net positive for the services revenue stream near term, and expect solid growth here, there could be slowing in forward years. Comments from management have also indicated that more AGP/AGP-like upgrades are in the pipeline that will be in market soon, as they go backward to B and E fleets (not one and done with the 7F upgrades)., however, the price points on these upgrades aren't clear yet and a TBD for further revenue uptick.

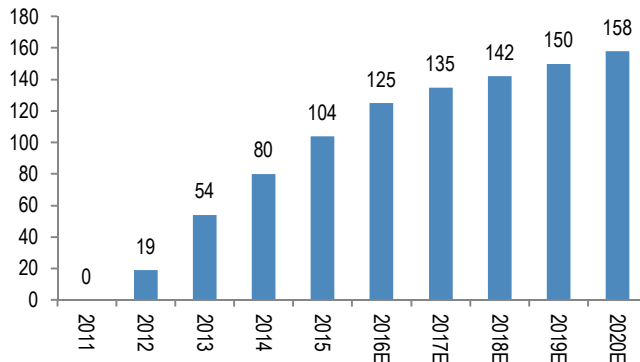
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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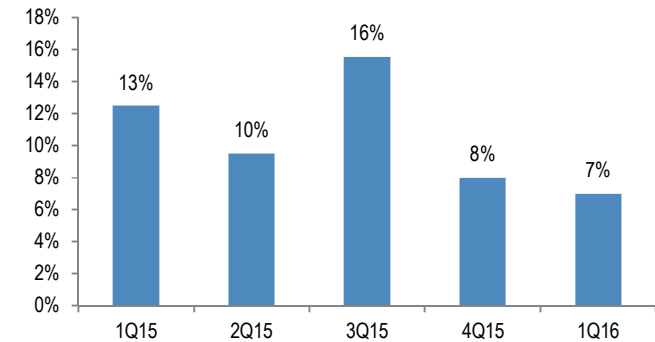
Figure 105: AGP upgrades

units



Source: Company Reports, J.P. Morgan Estimates

Figure 106: Quarterly Thermal Service Revenue Growth (Prior Segmentation, ex-Alstom)



Source: Company Reports, J.P. Morgan Estimates

In addition, key to sustaining growth in future years will be the expansion of the digital revenue base (75% of which is the AGP revenues), though we caution that this is not all incremental, as highlighted earlier in revenue growth ex-AGPs. We think the digital revenues can eat into existing revenue streams as customers renegotiate LTSAs which may include an upgrade in lieu of the existing long-term maintenance contract (more on this in the software/AGP stock debates section). Management sees its \$2B digital revenue base in Power growing to ~\$2.8B by 2016 and contributing ~\$3.5-4B in 5-7 years, or ~10-15% of the business. Specifically, the non-hardware portion of this (pure software), which is ~\$0.5B in revenue currently, is expected to grow at a 20%+ CAGR (~50% + orders growth in 2015), which we believe would contribute positively to margin mix.

Alstom: weak growth in structurally declining markets, cross selling helps: We believe there are some obvious merits to the Alstom deal, which primarily relate to new revenue streams for both GE and Alstom from a more wholesome power plant solution compared to competitors, driven by largely complementary products lines and technology. While we see structurally declining coal markets and subsequent demand for steam turbines, we see opportunity from steam upgrades and wholesome new product offerings. Most coal-fired power plants worldwide still run on base load capacity which has less efficiency, and upgrading them to combined cycle plants could be a big area of opportunity. Alstom's complementary offering, including Balance of Plant, Gas Turbine Generators, and HRSGs, enable GE to now provide a wholesome combined cycle plant solution. From a vertical integration standpoint, while HRSGs (30+ opportunities/year as per GE) and Gas Turbine Generators (40+ opportunities/year) are strong additions to the GE portfolio, GE also brings additional scope to Alstom's existing portfolio – examples are boiler feed pumps & valves and low & medium voltage equipment, bringing the total vertical integration opportunity to ~\$1B/year by 2018 as per GE. This is something we don't argue with as we see obvious potential here from the complementary product sets.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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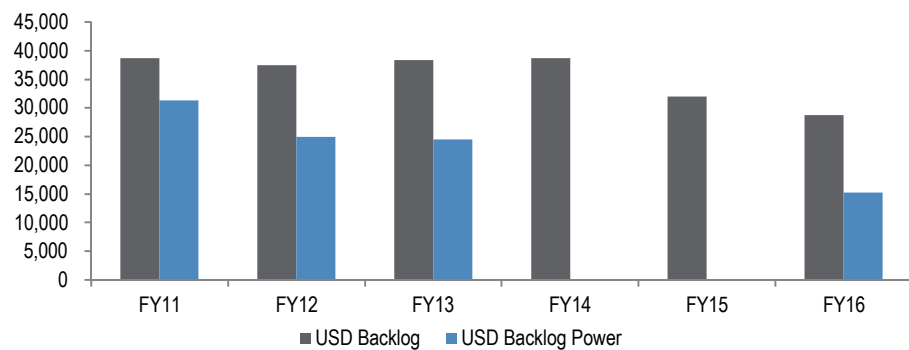
Table 79: Major Customer Wins for GE + Alstom Combination since Deal Announcement

Order Quarter	3Q14	3Q15	3Q15	4Q15	4Q15	1Q16	1Q16
Customer	Exelon	PSEG	QA Thermal Power	Bhikki, Pakistan	Balloki, Pakistan	SEPCOIII Electric Power	Tunisian Electricity and Gas Company
GE Product	4 7HA GTs, 2 STs	1 7HA GT, 1 ST	2 9HA GTs	2 9HA GTs	2 9HA GTs	2 9HA GTs	2 9E.03 GTs
Alstom Product	4 HRSGs	1 HRSG	1 ST	1 ST	1 ST	1 ST, 2HRSGs	eBOP

Source: Company reports and J.P. Morgan estimates.

Looking at recent order trends, Alstom's 1Q16 backlog (Mar-16) is down ~10% from the FY15 backlog (Mar-15), and down 25% over two years, with weakness partially driven by customer uncertainty. This dried new orders. Also a likely a factor is that GE moved away from some of the riskier contracts in the backlog.

Figure 107: Alstom Energy Backlog



Source: Company reports and J.P. Morgan estimates.

Keeping the above sub-segment moving parts in context including ALO, we summarize our bottom up revenue model below.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 80: Power Sub-segment Revenue Dynamics

Total Power	2015	2016E	2017E	2018E
Absolute Revenues Total				
Gas Power	14,885	23,471	24,499	25,433
Equipment (GT, ST, Aero Turbines)	5,791	9,515	9,641	9,750
Services	9,094	13,956	14,857	15,683
Distributed Power	3,520	3,004	3,004	3,004
Equipment	1,800	1,800	1,800	1,800
Services	1,720	1,204	1,204	1,204
Other/Intra-segment elims	3,085	3,162	3,241	3,322
Subtotal - Power (new reporting structure)	21,490	29,637	30,744	31,760
Y/Y		37.9%	3.7%	3.3%
Absolute Revenues Legacy Power				
Total Legacy	20,573	22,237	23,109	23,878
Legacy Power Services	12,889	13,818	14,554	15,203
Power Services	10,194	11,056	11,722	12,301
AGP	1,560	1,875	2,025	2,130
Distributed Power/Aero Turbines (<100 MW GTs)	1,800	1,800	1,800	1,800
Other	6,834	7,381	7,897	8,371
Other (Water/Nuke)/Intra-segment elims	2,695	2,762	2,831	2,902
Total Legacy Power Equipment	7,684	8,419	8,555	8,674
Power Equipment	7,294	8,019	8,145	8,254
Gas Power (GTs, STs, ex-Aero Turbines)	5,574	6,815	6,941	7,050
Distributed Power/Aero Turbines (<100 MW GTs)	1,720	1,204	1,204	1,204
Other (Water/Nuke)/Intra-segment elims	390	400	410	420
Y/Y growth				
Legacy Power & Water		8.1%	3.9%	3.3%
Gas Power (GTs, STs, ex-Aero Turbines)		13%	4%	4%
Equipment (GT, ST, Generators, IGCC)		10%	2%	1%
Services		8%	6%	5%
AGP		20%	8%	5%
Other		8%	7%	6%
Aero Turbines (<100 MW GTs) Equipment		-15%	0%	0%
Equipment		-30%	0%	0%
Services		0%	0%	0%
Other/Intra-segment elims		3%	3%	3%
Overall Legacy Services		7%	5%	4%
Overall Legacy Equipment		10%	2%	1%
Alstom				
Total Alstom Power	917	7,400	7,635	7,882
Equipment	217	2,700	2,700	2,700
Y/Y		0%	0%	0%
Service	700	4,700	4,935	5,182
Y/Y		5%	5%	5%
Alstom Renewables				
Equipment	87	2,000	2,000	2,000
Y/Y		0%	0%	0%

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Power Profit Dynamics

With ~20% margins this year, this business is well above peers such as Siemens/Alstom/MHI (admittedly there are some mix differences). Using data points from recent presentations, we present an estimated segment income statement, showing SG&A at 9% and R&D at 3%, implying a gross margin of ~30% (including Alstom, ~33% ex-ALO). Notably, the high single digit core SG&A/sales metric is already much lower than other power-focused peers such as Alstom, Wartsila, or Mitsubishi Heavy. This suggests to us that there is little in the way of low hanging fruit.

Table 81: Power Income Statement

	2016E	2016E (ex-ALO)
Sales	29,637	22,237
COGS	20,610	14,818
% sales	70%	67%
SGA	2,964	2,001
% sales	10%	9%
R&D	889	667
% sales	3.0%	3.0%
Operating Income	5,175	4,751

Source: Company Reports

Table 82: Power Peer SG&A/Sales

Latest FY Actual	
Company	Core SG&A/Sales
CAT	10%
MHI	13%
Siemens	15%
GE Power	9%

Source: Company Reports/Filings

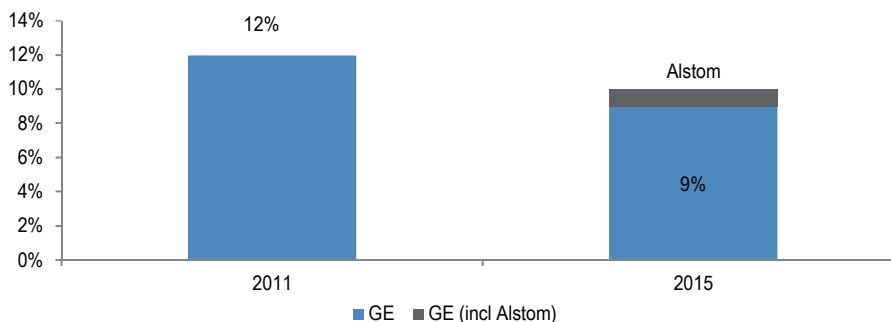
Table 83: Power Peer Segment Margins

Latest FY Actual	
Company	Segment Margin
CAT	
CAT Power	19%
MHI	
MHI energy & Environment	10%
Siemens	
Siemens Power & Gas	12%
Shanghai Electric	7%
High Efficiency & clean energy	5%
Harbin	
Thermal power equipment	12%
Hydro power equipment	13%
Engineering services for power	8%
Ancillary equipment for power	23%
GE	19%

Source: Company Reports/Filings.

Looking at the last couple of years (as per old segmentation), Power & Water margins have been pressured, down ~50bps from 2013-2015E, driven we believe by mix impacts from higher Wind and GT shipments, as well as lower DPs. This was offset somewhat by strong cost productivity with SG&A down ~300bps from ~12% in 2011 to ~9% in 2015 (~10% including Alstom).

Figure 108: Power SG&A/Sales



Source: Company reports and J.P. Morgan estimates.

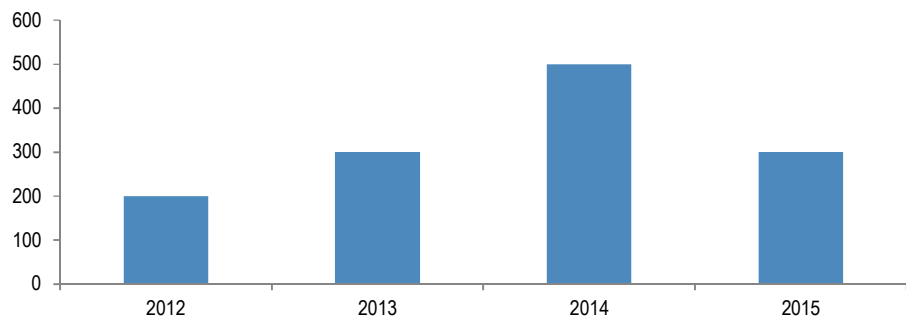
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Going forward, as highlighted earlier, mix is likely neutral into 2016, less of a headwind as compared to 2015 (saw ~\$300mm in mix impacts despite service revenues up ~10% y/y), as tailwinds to margins from continued strong services growth get offset by equipment dynamics, including H-turbines and Alstom (discussed in more detail later in this note). While order pricing has held in, we see the pricing environment as difficult going forward, with some competitors taking aggressive pricing actions and pressuring the overall market. We note, however, that order pricing on the H has been solid in recent quarters off of a low initial base. As well, Siemens recently highlighted that pressure is easing somewhat, with more pressure on what total packages can be offered to customers (this is where Alstom's products likely come in). Moreover, restructuring spend over the last 12-18 months implies continued potential for productivity benefits.

Figure 109: Power Restructuring Spend



Source: Company reports and J.P. Morgan estimates.

Our conversations with management suggest that Thermal Equipment profitability is likely to remain flattish in 2016 vs 2015 levels given the ramp in H turbines. The first units shipped lost money, but management noted that unit to unit pricing has improved and will get to target pricing faster than the F Class turbines and they see units getting to 'should cost' in half the time vs historical cycles (2-5 years). More specifically on the H turbine, management sees ~\$50-75mm of losses on average per quarter through 2016, or ~\$250-300mm in total for 2016 (more 1H weighted), with the learning curve improving through 2017/2018. However, we note that coming up the learning curve helps the gross margins more than the operating margin overall as there are still continued costs that go through the SG&A line related to NPIs, factors costs, testing (basically other launch related costs). Among the other sub-segments, Aero-derivative shipments are likely to be down this year, which we see as negative from a mix perspective since these products carry margins in the low to mid teens (our estimate). Below we provide an illustrative margin bridge from a bottom up perspective to gauge margin potential for the segment in 2016/2017. While management has not given explicit margins for any of these segments, we arrive at these rough ballpark numbers by looking at historical margin performances.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 84: 2016 Power Legacy Simplified Sub-segment Profit Walk

\$mm except where noted

	Sales Walk	Profit Walk	
Start	20,573	4,582	22.3%
Thermal Equipment	1,241	(124)	Inc/Dec
<i>H Turbine</i>	2,078	(275)	
<i>Other Turbine</i>	(836)	151	
Distributed Power	(516)	(74)	14%
Thermal Services	926	365	39%
AGP	312	174	56%
Other	547	191	35%
End	22,234	4,750	21.4%

Source: J.P. Morgan estimates

Table 85: 2017 Power Legacy Simplified Sub-segment Profit Walk

\$mm except where noted

	Sales Walk	Profit Walk	
Start	22,237	4,751	21.4%
Thermal Equipment	126	276	219%
<i>H Turbine</i>	220	200	
<i>Other Turbine</i>	(94)	76	
Distributed Power	0	0	
Thermal Services	736	275	37%
AGP	150	87	58%
Other	517	189	37%
End	23,109	5,302	22.9%

Source: J.P. Morgan estimates

Alstom mix impact – The integration of Alstom’s Thermal business into the Power segment is expected to have a significantly negative impact on margins for the next few years given the near breakeven underlying profit levels of the business currently, with synergies kicking in over a period of five years. We discuss Alstom dynamics in more depth towards the end of this section.

Table 86: Power Margin Impact from Alstom

\$mm

	2015	2016E	2017E	2018E
Legacy Power Segment Profits	4,582	4,751	5,302	5,653
Margin	22.3%	21.4%	22.9%	23.7%
Alstom Power Profit	(80)	424	996	1,519
Total Power	4,502	5,175	6,299	7,172
Margin Total Power	20.9%	17.5%	20.5%	22.6%

Source: J.P. Morgan estimates

The bottom line is that margin improvement in the underlying business will again rely on services, which we now believe is more a function of growing AGP and software mix (Power has the highest degree of software revenues in GE), with less opportunity from SG&A and R&D declines since these metrics are already lean vs peers. Flow through and execution on Alstom synergies (captured in the mix + productivity row below) will also be key to results.

Table 87: Power Segment Margin Bridge

\$mm	2014	2015	2016E	2017E	2018E
Sales Start	19,315	20,580	21,490	29,637	30,744
Core	1,540	793	2,362	1,107	1,016
<i>Price</i>	(200)	100	0	0	0
<i>Volume</i>	1,740	693	2,362	1,107	1,016
Acquisitions		917	6,483		
Forex	(75)	(800)	(698)	0	0
Other	(200)				
Sales End	20,580	21,490	29,637	30,744	31,760
OP Start	4,328	4,486	4,502	5,175	6,299
Core	73	336	323	124	323
<i>Price</i>	(200)	100			
<i>Volume</i>	273	236	323	124	323
Mix + Productivity	100	(300)	(50)	1,000	550
Inflation	100				
Acquisitions		(100)	504		
Forex	(15)	(120)	(105)	0	0
Other	(100)	200			
OP End	4,486	4,502	5,175	6,299	7,172
Margin	21.8%	20.9%	17.5%	20.5%	22.6%

Source: Company Reports, J.P. Morgan Estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Aviation – Solid Revenue Growth in the Medium Term, But Mix Headwinds Coming

This segment is likely to be the bellwether for GE Industrial over the next couple years, with a solid and visible OE cycle and service inflection for the CFM56 coming up. Mix is a headwind to margins in the near to medium term, but profit growth here is more visible than in other segments. We start by looking at the macro backdrop before digging into GE's earnings outlook.

Macro Backdrop

We believe the Aerospace cycle has room to grow at a solid Macro+ rate for the next 3-5 years. Delivery schedule forecasts from the JPMorgan A&D team show a 5-yr CAGR of ~5% through 2020, with the number of units at that time ~2x 2010 levels.

Table 88: Large Aircraft Deliveries, 2010-2020E

Boeing	2010	2011	2012	2013	2014	2015	2016E	2017E	2018E	2019E	2020E
737	376	372	415	440	485	495	490	534	579	624	624
747	0	9	31	24	19	18	9	6	6	6	6
767	12	20	26	21	6	16	10	21	30	30	30
777	74	73	83	98	99	98	97	84	75	70	70
787	0	3	46	65	114	135	135	150	150	150	150
Subtotal	462	477	601	648	723	762	741	795	840	880	880
Airbus	2010	2011	2012	2013	2014	2015	2016E	2017E	2018E	2019E	2020E
A320 Family	401	421	455	493	490	491	533	560	590	620	635
330/340	91	87	103	108	108	103	65	73	79	65	65
350	0	0	0	0	1	14	35	70	110	115	110
380	18	26	30	25	30	27	25	20	15	10	10
Subtotal	510	534	588	626	629	635	658	723	794	810	820
Other	2010	2011	2012	2013	2014	2015	2016E	2017E	2018E	2019E	2020E
E190/5	75	92	85	62	29	17	25	20	20	25	40
C-Series	0	0	0	0	0	0	15	36	58	77	80
Subtotal	75	92	85	62	29	17	40	56	78	102	120
Narrowbody	852	885	955	995	1,004	1,003	1,063	1,150	1,247	1,346	1,379
Widebody	195	218	319	341	377	411	376	424	465	446	441
Total	1,047	1,103	1,274	1,336	1,381	1,414	1,439	1,574	1,712	1,792	1,820
Growth	-1.3%	5.3%	15.5%	4.9%	3.4%	2.4%	1.8%	9.4%	8.8%	4.7%	1.6%

Source: Company reports and J.P. Morgan estimates.

Our analyst forecasts that manufacturers will produce ~8% of the installed base the next five years, a ~5% CAGR in seat growth, driven by strong traffic growth, as well as replacement demand from availability of new aircraft and a trend toward earlier retirement.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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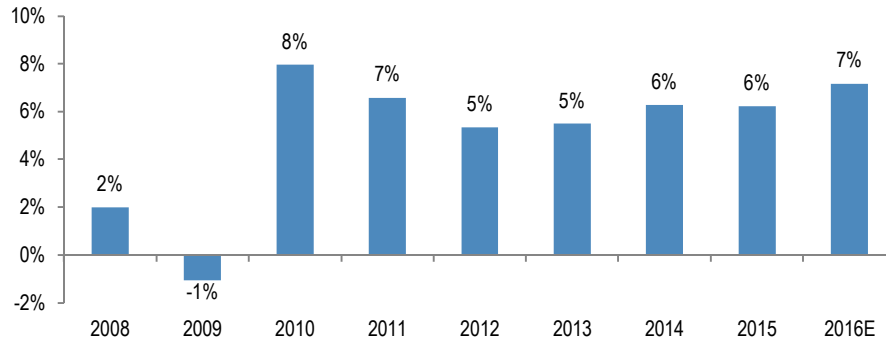
Table 89: J.P. Morgan Passenger Aircraft Supply-Demand Model for > 100 Seats, 2016-2020E

	2016E	2017E	2018E	2019E	2020E
Initial Seats (th)	3,343	3,500	3,678	3,876	4,076
Additions (th)	267	294	319	327	332
Retirements (th)	(110)	(116)	(121)	(128)	(134)
Ending Seats (th)	3,500	3,678	3,876	4,076	4,274
Growth	4.7%	5.1%	5.4%	5.1%	4.9%
Seats Produced (% installed base)	8.0%	8.4%	8.7%	8.4%	8.2%
Retirement Rate	<u>3.3%</u>	<u>3.3%</u>	<u>3.3%</u>	<u>3.3%</u>	<u>3.3%</u>
Net Growth	4.7%	5.1%	5.4%	5.1%	4.9%
Seats CAGR, 2015-2019	5.0%	Growth Contribution			60%
Traffic CAGR, 2015-2019	5.0%	Replacement Contribution			40%

Source: Ascend, company reports, seatguru, and J.P. Morgan estimates. Note: includes passenger aircraft only.

In our view, air traffic is a key factor in determining long-term aircraft demand, and IATA currently forecasts ~7% growth this year, ahead of the 30-year average of 5%+ and an acceleration from 2015 levels.

Figure 110: Global RPKs Growth



Source: IATA, ICAO and J.P. Morgan estimates.

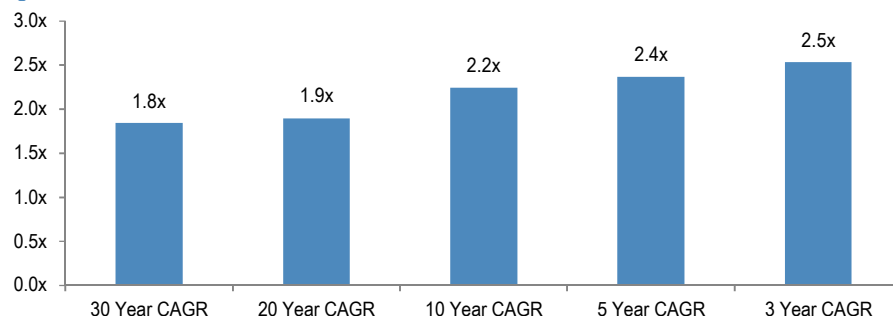
The ratio of traffic growth to GDP growth has been steadily increasing in recent years, currently tracking above the ~2x multiple for the last 10 years. This dynamic supports the view of resiliency and macro+ fundamentals in this end market.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 111: Traffic/GDP CAGR for Different Time Periods



Source: IATA, ICAO, and J.P. Morgan estimates

According to JPM A&D analyst Seth Seifman, growing demand for air travel accounts for ~60% of new aircraft demand, with a correlation between global RPKs and large aircraft deliveries of 0.93 since 1970. On a bottom up basis, the three most important regions for global traffic are Asia/Pacific, Europe, and North America, which combined account for 83% of the total, with a 24-33% contribution each. In addition, the Middle East, which accounts for ~10% of traffic, is the fastest growing region, contributing ~20% of growth.

Table 90: Estimated Traffic Growth by Region, 2010-2016E

	2010	2011	2012	2013	2014	2015	2016E
Africa	12%	3%	10%	3%	4%	3%	2%
Asia/Pacific	12%	7%	6%	8%	8%	8%	9%
Europe	4%	8%	5%	4%	7%	5%	6%
Latin America	12%	11%	10%	6%	6%	9%	7%
Middle East	18%	10%	15%	11%	10%	11%	12%
North America	4%	3%	1%	2%	3%	3%	4%
Total	8%	7%	5%	5%	6%	6%	7%

Source: ICAO, IATA and J.P. Morgan estimates.

GE Aviation Sub-segment Dynamics

We see MSD top line growth, as strong spares growth gets offset somewhat by LSD commercial OE revenue, and flattish trends in Military (services up, equipment down). We don't see this trend changing materially in forward years, with potential for acceleration in OE shipments, which are highly tied to aircraft delivery schedules that are long term in nature. We provide a summary sub-segment breakout below and then delve into the details of each sub-segment.

Table 91: Aviation Sub-segment Revenue Growth Dynamics

	2015 Revs (JPMe)	% of sales	2016E Y/Y	2017E Y/Y	2018E Y/Y	Notes
Commercial Services	9,840	40%	10%	8%	8%	CFM Ramp, Orders Strong OE Deliveries Driven, Price Steady Growth
Comm'l OE	8,137	33%	5%	2%	2%	
Systems (BGA, Integrated, Avionics, Avio)	2,898	12%	2%	2%	2%	
Military Engine	1,813	7%	0%	0%	0%	
Military Services	1,973	8%	4%	2%	2%	Likely stable at low levels Continued strength at levels consistent with 2015
Overall			6%	4%	4%	

Source: Company reports

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

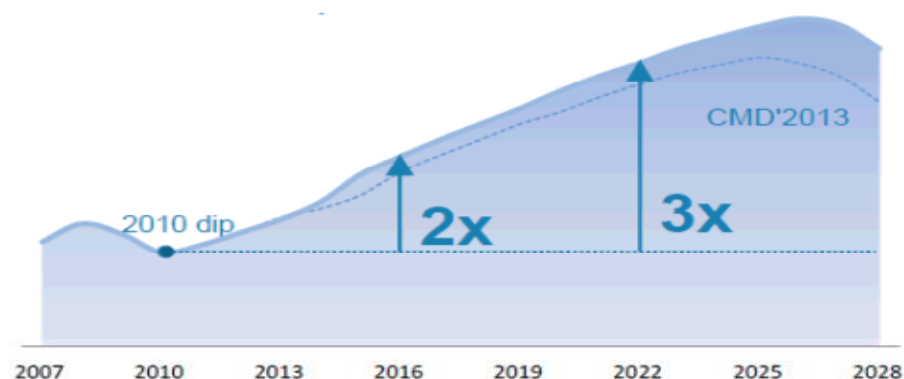
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Commercial Services: Commercial services account for 40% of segment revenue (~9% of GE revenue), and performance here was solid in 2015, with close to 15% revenue growth.

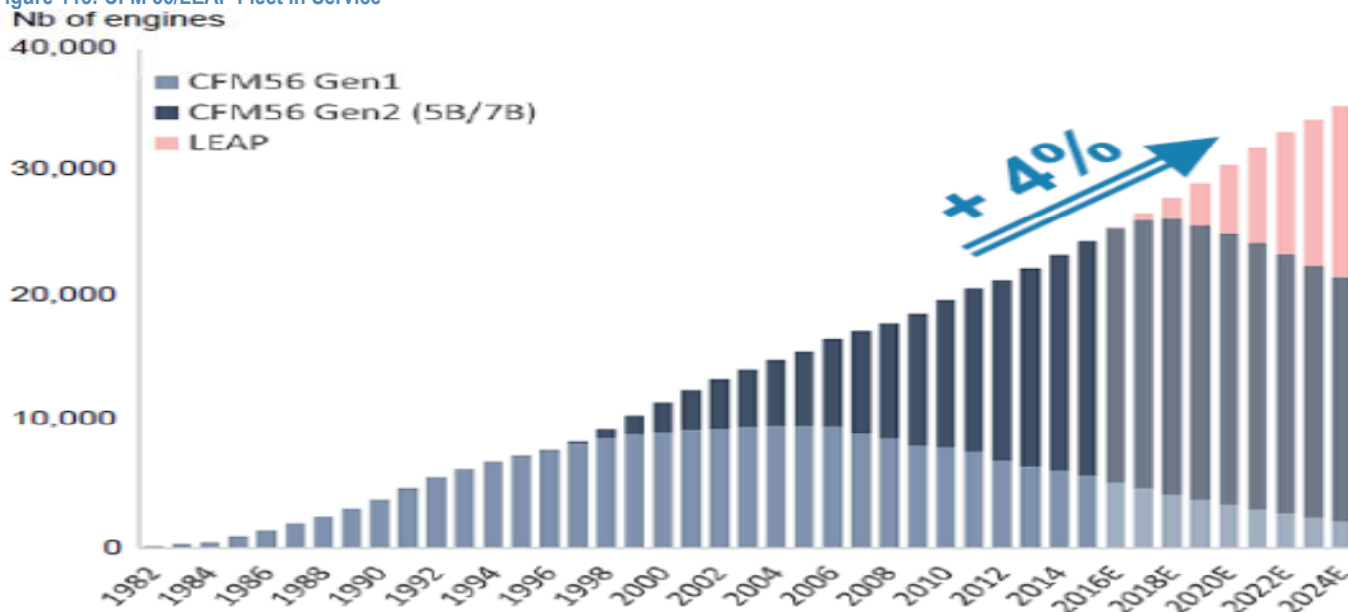
Spares - Growth in spares was the highlight with 23% y/y growth in 2015 after ~20% growth in 2014. Safran, GE's 50% partner in CFM engines, put out a slide showing the potential ramp in service revenues related to the CFM56, expecting it growth to ~2x the 2010 revenue base by 2016 and reaching 3x by 2022 before declining from 2025 onwards. This implies HSD type growth rate for the next few years.

Figure 112: CFM 56 Spare Parts Revenue Profile



Source: Safran March 2016 CMD Presentation. Used with permission.

Figure 113: CFM 56/LEAP Fleet in Service



Source: Safran March 2016 CMD Presentation. Used with permission.

The table below has forecasts from a leading industry consultant on the size of the engine MRO market (including spares) over the next decade. It suggests that GE and Safran will continue to post industry leading aftermarket growth rates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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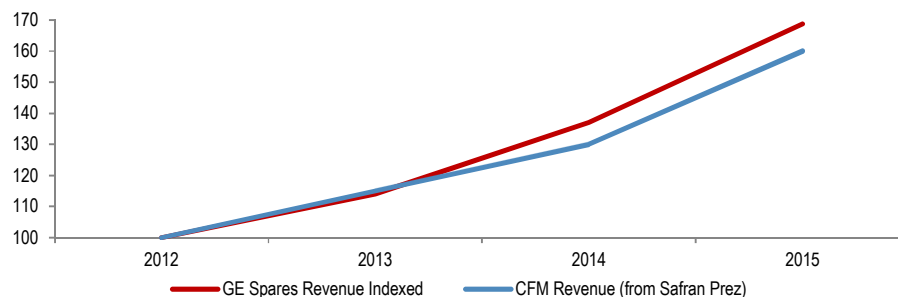
Table 92: Engine MRO Market Forecast (2015 US\$ bn)

	2015	2020	2025	2015-20 CAGR	2020-25 CAGR	2015-25 CAGR
GE Aviation	8.2	10.2	11.5	4.5%	2.4%	3.5%
CFM International (GE / Safran JV)	5.3	7.8	14.0	8.0%	12.4%	10.2%
Rolls-Royce	5.2	7.3	8.9	7.0%	4.0%	5.6%
IAE	4.8	7.4	6.1	9.0%	-3.8%	2.5%
Pratt & Whitney	4.3	3.4	5.0	-4.6%	8.0%	1.4%
Engine Alliance (GE / P&W JV)	0.2	1.0	1.2	n/m	3.7%	20.9%
Total	28.0	37.1	46.7	5.8%	4.7%	5.3%
Total GE (inc 50% CFM and 50% EA)	11.0	14.6	19.1	5.9%	5.5%	5.6%
Total Pratt & Whitney (inc 100% IAE and 50% EA)	9.2	11.3	11.7	4.2%	0.7%	2.3%
Total Rolls-Royce	5.2	7.3	8.9	7.0%	4.0%	5.4%
Total	28.0	37.1	46.7	5.8%	4.7%	5.3%

Source: Cavok (A division of Oliver Wyman), April 2015.

Interestingly, GE's spares revenue has been tracking above the CFM56 trend line as indicated by Safran, making comps tougher going forward. Management has been vocal about a non-repeat of the 2015 performance in 2016, reinforced by similar comments from CFM56 engine partner Safran at its investor day earlier this year. Therefore, we don't see a repeat of the 20%+ growth and expect slower but still solid HSD-LDD growth driven by the continued ramp in CFM56 engine shop visits.

Figure 114: GE Spares Revenue Indexed vs CFM 56 Spares Revenue Profile



Source: Company reports and J.P. Morgan estimates.

In addition, Safran at its investor day also noted that RPFH (rate per flight hour) contracts will be 50-60% of LEAP + CFM fleet by 2020, which is lower than what they had expected at the 2013 investor day. The reasons they cited were higher orders (10K vs 2K then), which helped them get a better picture of behavioral trends in the market vs three years ago, as well as some airlines preferring to postpone service decisions with the expectation that other players possibly enter the market.

MRO – While <5% of segment revenue, MRO dynamics have been a headwind to commercial services growth in 2015, with revenue down ~35% y/y, a ~1-2% headwind to total segment organic growth. 1Q however had a solid start here, contributing ~6% of the overall ~10% growth in the Aviation segment.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 93: GE Commercial MRO Sales 2015 Growth

	2014	2015	Y/Y
Commercial Service Sales	8,871	10,080	14%
Commercial Spares	7,471	9,195	23%
MRO Sales	1,400	885	-37%
MRO Impact to overall Aviation organic			(210bps)

Source: Company reports and J.P. Morgan estimates.

Table 94: GE Commercial MRO Sales 1Q16 Growth

	1Q15	1Q16	Y/Y
Commercial Service Sales	2263	2393	6%
Commercial Spares	2,339	2,797	20%
MRO Sales	76	404	431%
MRO Impact to overall Aviation organic			+578bps

Source: Company reports and J.P. Morgan estimates.

Conversations with management indicate that revenues here have been lumpy, but the revenue base in 2015 was eroded significantly to just ~2.5% of sales vs 5% of sales in 2014. We believe pressures in the MRO market are likely to continue given consolidation in the airline industry, as well as potential for new players entering the market, per comments from Safran. The US has led the way on consolidation - the top four airlines now have a total market share of 88% of the US market. There has also been significant consolidation in Europe, while in the rest of the world, airline consolidation has lagged somewhat. We believe that this consolidation has been negative for companies selling spares and MRO services to airlines.

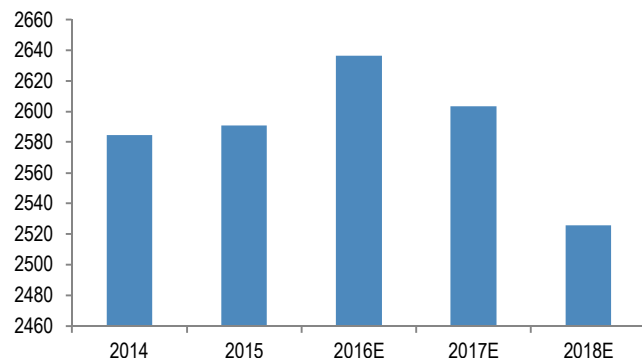
Commercial OE: This sub-segment (33% of segment revenue, ~7% of GE revenue) has the most visible long-term growth profile, directly correlated to backlog driven build rates at aircraft manufacturers, with transparent disclosures on GE's participation in these programs. Total commercial engine shipments are expected to grow 5-10% in 2016 as per management, primarily driven by the LEAP ramp. There could be volatility from year to year, but over a longer timeframe (3-5 years), we believe growth here is bankable. We model low to mid-single digit revenue growth over the next few years, but based on expected aircraft build rates, and GE's presence on these programs, there could be a decline in the coming years, as GENx rolls down and LEAP cannibalizes CFM56 deliveries though revenue growth in any given year can be impacted by shipment timing and subsequent delivery by aircraft manufacturer to the airline customer. For 2016 specifically, GE expects to ship ~100 LEAP engines (~10-15 in 2Q), ramping to ~500 in 2017 and ~1200 in 2018, offsetting like declines in the CFM56, though with a total impacted by share loss on the A320NEO.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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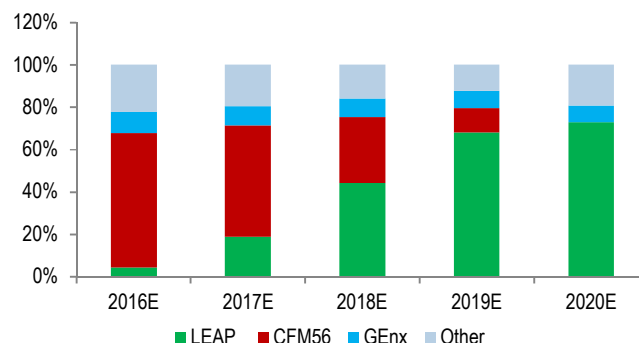
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Figure 115: GE Illustrative Engine Shipments As Per Bottom up Delivery Model



Source: J.P. Morgan estimates.

Figure 116: GE Engine Shipment Mix As Per Bottom Up Delivery Model



Source: J.P. Morgan estimates.

Military Equipment & Services: Military revenues were down ~5% in 2015 (services up 7%, equipment down 15%), with growth expected to remain subdued in 2016, though the year is off to a solid start at ~5% growth in 1Q (services up 4%, equipment up 8%). GE sees flying hours staying weak, and they don't expect units to be as high as they were during the overseas contingency operation. For 2016, after two years of OE decline, equipment revenues are depressed, and we don't expect similar magnitude of decline in 2016, with services largely offsetting. We see flattish growth in this sub-segment for the next few years.

Profits – Mix dynamics key to watch

While arguably the most straightforward fundamental story at GE, margin in this segment will likely be a key area of debate over the next few years. We start by looking at recent performance here. Mix and inflation were significant headwinds in 2011/2012, likely driven by GENx, offset by pricing tailwinds. In the last 2-3 years, mix was less of a headwind as GENx came down the learning curve, while commercial spares growth was strong at well above segment average margin, with pricing a continued solid tailwind.

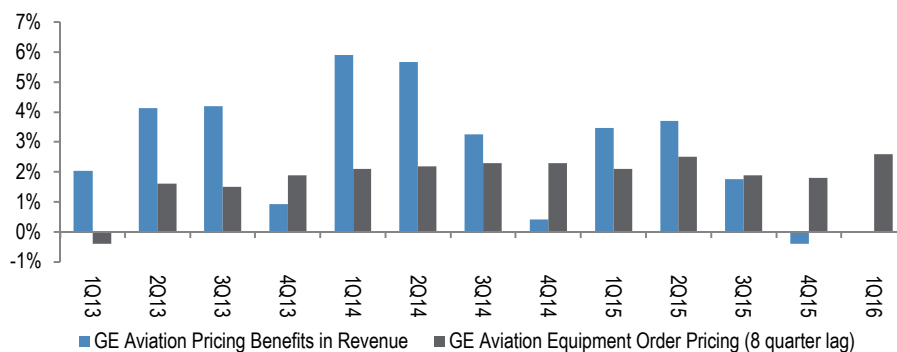
On order pricing, we note that the pricing realized in revenue has been consistently higher than orders, implying strong pricing gains on the book and ship services side of the business. The strong pricing here is likely also a function of LTSA contractual adjustments which we believe come primarily in the Aviation and Power segments. These adjustments contributed ~\$1.4B to overall GE earnings in 2015 compared to ~\$1B in 2014 and ~\$300mm in 2013.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 117: Aviation Order Pricing Trends vs Pricing realized in Revenue



Source: Company reports and J.P. Morgan estimates.

Table 95: Aviation Segment Margin Bridge

	2011	2012	2013	2014	2015
Sales Start	17,619	18,859	19,994	21,911	23,990
Core	1,340	1,135	1,417	1,229	670
Price	200	750	600	800	540
Volume	1,140	385	817	429	130
Acquisitions			500	750	
Forex					0
Other	(100)	0		100	0
Sales End	18,859	19,994	21,911	23,990	24,660
OP Start	3,304	3,512	3,747	4,345	4,973
Core	408	835	698	878	509
Price	200	750	600	800	540
Volume	208	85	98	78	(31)
Mix + Productivity	0	(300)	(100)	(200)	300
Inflation/Deflation	(100)	(300)	(200)	(300)	(175)
Acquisitions			100	150	
Forex					
Other (launch costs)	(100)	0	100	100	(100)
OP End	3,512	3,747	4,345	4,973	5,507
Margin	18.6%	18.7%	19.8%	20.7%	22.3%
Core Incremental	18.2%	22.1%	12.0%	18.2%	-23.8%

Source: Company Reports, J.P. Morgan Estimates. *2014 onwards reported as mix, prior to that reported as productivity restructuring saves estimated by JPM

Looking at SG&A and R&D shows that R&D spending is at appropriate levels in the context of peers, while there is potential to reduce SG&A/sales further.

Table 96: Aviation Income Statement

	2014
Sales	23990
COGS	15,307
% sales	64%
SGA	1,535
% sales	6.4%
R&D	2175
% sales (ex 25% customer funded)	9%
Operating Income	4973

Source: Company Reports, J.P. Morgan estimates

Table 97: Aviation Peers Core SG&A/Sales

Latest FY Actual		
Company	SG&A/Sales	R&D/Sales
Honeywell Aero/Def	5%	4%
COL	3%	10%
UTX Pratt & Whitney	3%	8%
GE	6%	9%

Source: Company reports/filings.

Table 98: Aviation Peer Segment Margins

Latest FY Actual	
Company	Segment Margin
Rolls Royce	12%
MTU Aero Engines	9%
Safran	13%
UTX P&W	13%
HON Aerospace	21%
Average	14%
GE	22%

Source: Company reports/filings.

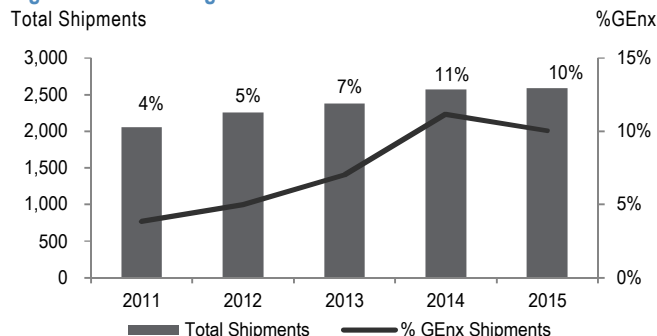
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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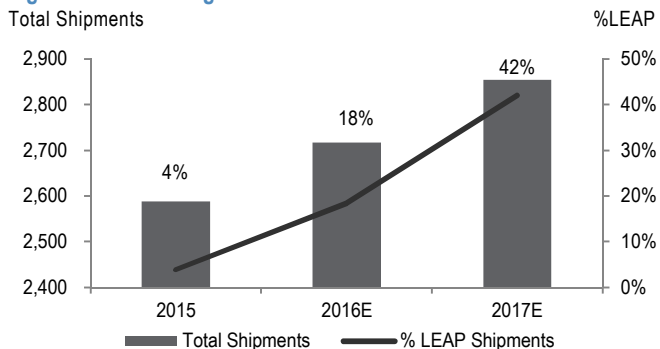
Going forward, strong services growth should aid margin mix, though this segment has visible pressure from an equipment margin perspective. We see high likelihood of negative commercial OE margins in 2017, driven by the LEAP ramp. For perspective, we show Aviation margins during the GENx ramp had a similar negative mix impact.

Figure 118: GENx Engine Mix



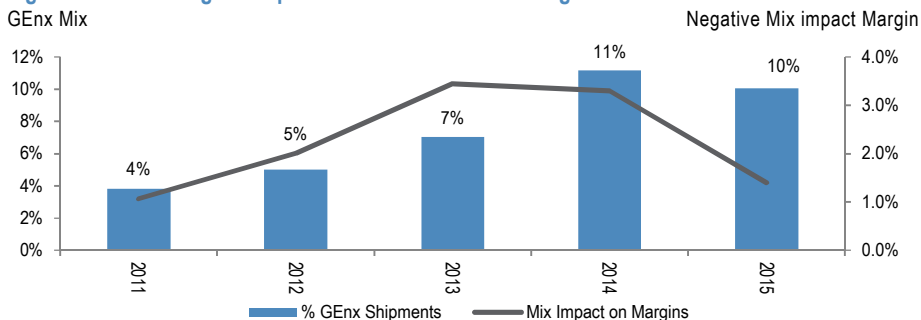
Source: Company Reports, J.P. Morgan Estimates

Figure 119: LEAP Engine Mix



Source: J.P. Morgan Estimates

Figure 120: GENx Engine Shipment Mix vs GE Aviation Margin



Source: Company Reports, J.P. Morgan Estimates. Mix impact calculated from 10-Ks filings commentary

Due to the mix dynamics (driven by LEAP) and continued ramp in spares, we look at margin potential in two different ways: (1) using standard management bridges, and (2) by breaking down margin across sub-segments to gauge impact from LEAP mix. Across sub-segments, we assume equipment growth of mid-single digits and services growth of mid to high-single digits, which includes high margin spares growth of high single digits. We assume ~100 LEAP shipments, with losses in-line with what we believe occurred during the Genx ramp (for illustrative purposes only we assume a ~\$2.5mm loss per engine). All-in, we arrive at roughly flat margins y/y for 2016. Key upside/downside drivers are higher than expected spares shipments and higher/lower than expected losses on the initial LEAP shipments.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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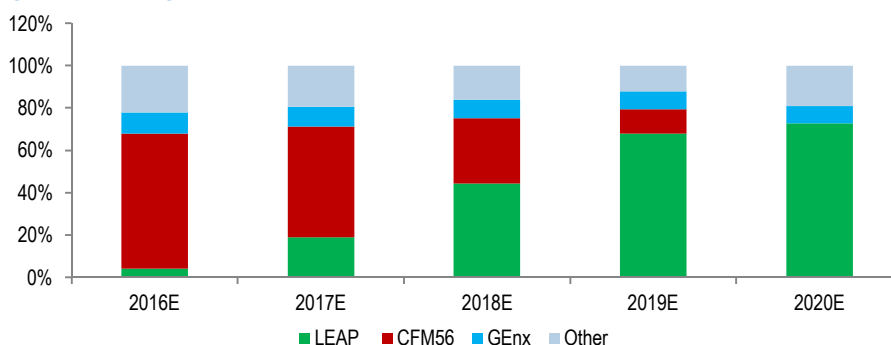
Table 99: Illustrative Aviation 2016 Sub-segment Profit Bridge (JPMe)

	2015	2016	Change	Profit Change	Margin Change	Incremental (JPMe)
Sales	24,660	26,263	1,603	366	0.0%	
Equip	11,800	12,563	763	(11)	-0.7%	
Comm'l	9,922	10,685	763	(65)	-0.9%	
Genx	1,820	1,820	0	130	0.5%	
LEAP	0	400	400	(250)	-1.3%	
Other comm'l	8,102	8,465	363	55	-0.1%	15%
Military	1,878	1,878	0	0	0.0%	15%
Services	12,800	13,699	899	377	0.7%	
Commercial Spares	9269	10010	742	337	0.7%	45%
Other	1,666	1,750	83	25	0.0%	30%
Military	1,865	1,940	75	15	0.0%	20%
Profit	5,507	5,857				
Margin	22.3%	22.3%				

Source: J.P. Morgan estimates.

From 2017 and 2018 onwards, we expect to start seeing OE mix headwinds hitting harder as the LEAP ramps and CFM 56 engines, which are making money, roll off, both of which get somewhat offset by improving margins at Genx and continued growth in services, albeit at a lower rate than recent years

Figure 121: GE Engine Shipment Mix



Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 100: Illustrative Aviation 2017 Sub-segment Profit Bridge (JPMe)

	2016	2017	Margin Change	Inc/Dec (JPMe)
Sales	26,263	27,445	-0.2%	
Equip	12,563	12,867	-0.8%	
Comm'l	10,685	10,989	-0.8%	
Genx	1,820	1,673	0.6%	
LEAP	200	1000	-1.7%	
Other comm'l	8,465	8,316	0.1%	12%
Military	1,878	1,878	0.0%	15%
Services	13,699	14,578	0.6%	
Commercial Spares	10010	10811	0.6%	40%
Other	1,750	1,750	0.0%	30%
Military	1,940	2,017	0.0%	20%
Profit	5,857	6,065		
Margin	22.3%	22.1%		

Source: J.P. Morgan estimates.

Table 101: Illustrative Aviation 2018 Sub-segment Profit Bridge (JPMe)

	2017	2018	Margin Change	Inc/Dec (JPMe)
Sales	27,445	28,680	-0.8%	
Equip	12,867	13,156	-1.5%	
Comm'l	10,989	11,278	-1.5%	
Genx	1,673	1,540	0.3%	
LEAP	1000	2400	-2.2%	
Other comm'l	8,316	7,338	0.4%	12%
Military	1,878	1,878	0.0%	15%
Services	14,578	15,523	0.6%	
Commercial Spares	10811	11676	0.6%	40%
Other	1,750	1,750	0.0%	30%
Military	2,017	2,098	0.0%	20%
Profit	6,065	6,109		
Margin	22.1%	21.3%		

Source: J.P. Morgan estimates.

Looking top down, on the positives, we see pricing as continued tailwind, with likely benefits from raw material deflation after a headwind in 2015. Based on restructuring actions over the last couple years, we see continued benefit from productivity as well. As discussed above, mix is an obvious headwind that we expect to offset these benefits. Overall, we see potential for flattish margins through 2018.

Table 102: Aviation Segment Margin Bridge

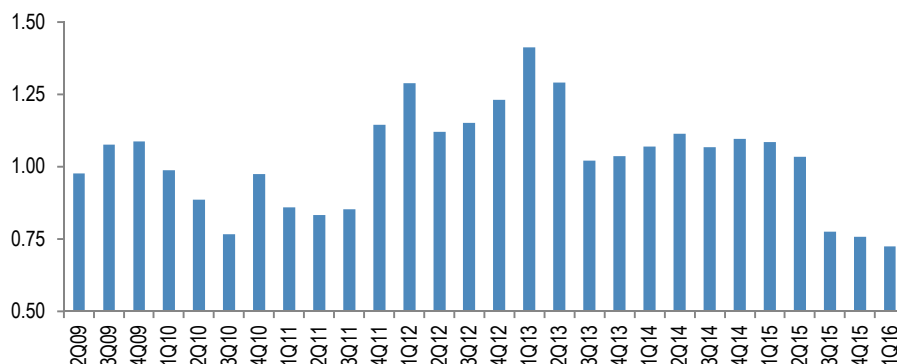
	2013	2014	2015	2016E	2017E	2018E
Sales Start	19,994	21,911	23,990	24,660	26,263	27,445
Core	1,417	1,229	670	1,603	1,182	1,235
Price	600	800	540	100	0	0
Volume	817	429	130	1,503	1,182	1,235
Acquisitions	500	750				
Forex			0	0	0	0
Other		100	0	0	0	0
Sales End	21,911	23,990	24,660	26,263	27,445	28,680
OP Start	3,747	4,345	4,973	5,507	5,857	6,065
Core	698	878	509	700	309	293
Price	600	800	540	100	0	0
Volume	98	78	(31)	600	309	293
Mix + Productivity	(100)	(200)	300	(100)	(100)	(250)
Inflation/Deflation	(200)	(300)	(175)	(50)	0	0
Acquisitions	100	150			0	0
Forex						
Other (launch costs)	100	100	(100)	(200)	0	0
OP End	4,345	4,973	5,507	5,857	6,065	6,109
Margin	19.8%	20.7%	22.3%	22.3%	22.1%	21.3%

Source: Company Reports, J.P. Morgan Estimates. *2014 onwards reported as mix, prior to that reported as productivity restructuring savings estimated by JPM

Oil & Gas – Dynamics Still Fluid; We See Risks Through 2017 and Possibly 2018

The first leg of significant Oil & Gas headwind has started to play out at GE. Not surprisingly, given the long cycle nature of the backlog here, management sees a sharp deceleration in organic growth in 2016 (down ~15-20%) vs 2015 levels. Looking at order and revenue trends, segments that have seen the most impact are upstream onshore and offshore related segments, with offshore impacts likely worsening in 2016. Midstream and downstream have seen less of an impact so far, but recent orders suggest trends are relatively better, particularly in the Downstream Tech segment, but order trends in turbomachinery (~50% midstream exposed) deteriorated significantly in late 2015 and 1Q16, posing a risk for 2017 and beyond. This is where we see incremental risk going forward as a potential stabilization in upstream gets offset by declines in midstream/downstream. We walk through the individual sub-segment revenue dynamics below and discuss subsequent margin impacts from a top down basis later in the section.

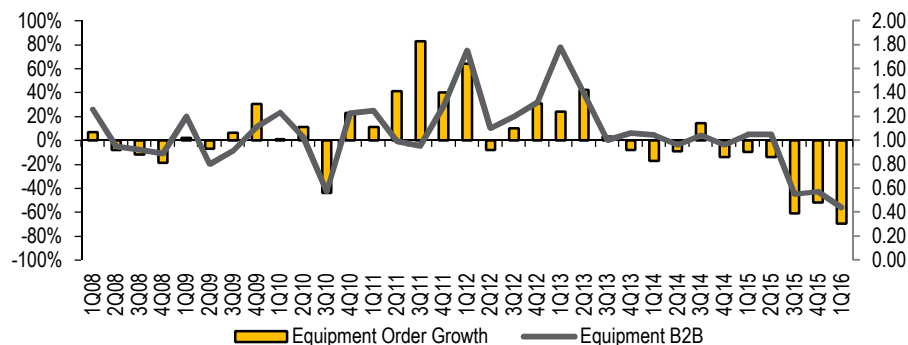
Figure 122: Oil & Gas B2B



Source: Company reports and J.P. Morgan estimates.

Looking specifically at Equipment, 1Q B2B is the lowest ever for this segment (4Q15 was roughly similar), showing steeper revenue declines are on the come. Given the order comps over the last few quarters, there is a high likelihood of 2017 Oil & Gas equipment organic sales being down double digits y/y.

Figure 123: Oil & Gas Equipment B2B and Order Growth



Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

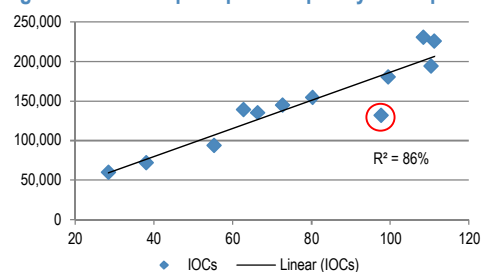
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Quick Macro backdrop

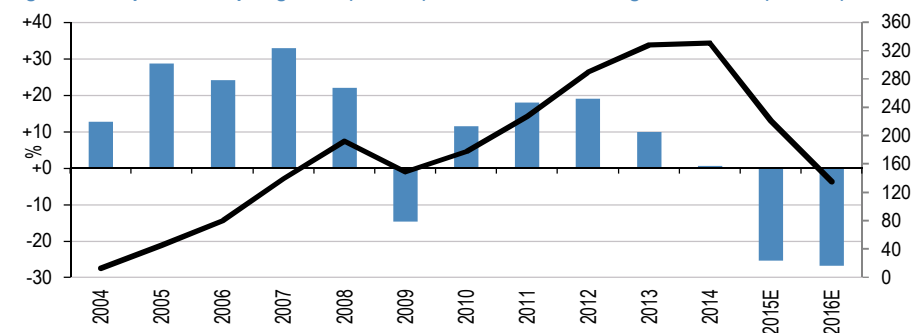
While US E&P capex budgets are expected to recover in 2017 after declines of ~50%/y/y for two consecutive years, given the historical lag effect of international IOC and NOC capex budgets vs oil price indicates potential declines overall in 2017 as well. This is attributable to the longer-cycle nature of international projects (offshore in particular), which by definition commit capital across multiple years. According to the JPM global E&P capex survey, the aggregate change in upstream capex planned for 2016 is -23% y/y (-27% ex-MENA). In our bottom-up survey, listed NOCs are -21%, IOCs are -25%, and Independents are -46%. Regionally, capex budgets show declines of 27% in Europe, 14% Russia, 23% in AsiaPac, 28% in LATAM, 30% in Canada and 53% in US Independents. For 2017, our global E&P team sees a ~10% y/y decline in global upstream capex based on 1) historical correlation of *prior* year cash flows with capex budgets, suggesting the lower expected 2016 oil price will have a fuller impact in 2017, 2) long-dated projects carry significant inertia, so IOC flexibility to cut capex increases another 10%+ each year in 2017-19, 3) potential price deflation in 2017 which would permit a capex decline of 4% on similar physical activity/outcomes, as longer legacy services contracts roll off and lower rates roll on, e.g. offshore drilling, FPSOs, and re-engineered designs, and 4) low oil prices and cash flow will be increasingly difficult to be bridge by further debt, so a modest recovery in oil prices would likely be used to repair balance sheets.

Figure 124: IOC capex spend vs prior year oil price



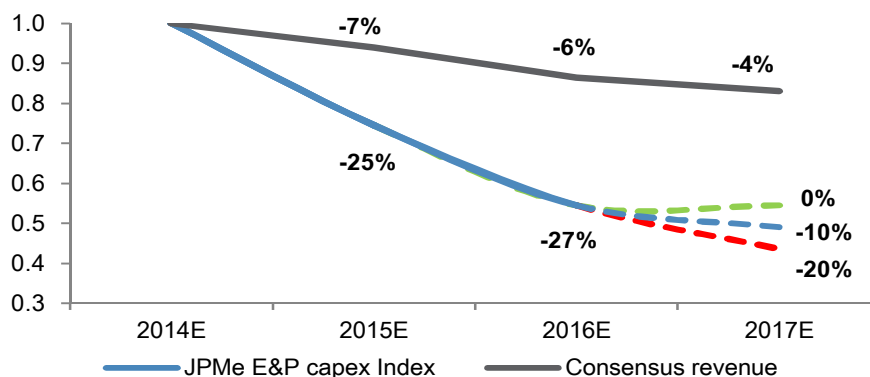
Source: Bloomberg, company data, J.P. Morgan estimates Note: x-axis \$/bbl, y-axis \$m

Figure 125: Upstream capex growth (% LHA) and cumulative change since 2004 (% RHA)



Source: Company reports, J.P. Morgan estimates

Figure 126: 2017 E&P capex index – bull, base, bear case (% YOY)



Source: Bloomberg, company data, J.P. Morgan estimates Note: consensus shown is European Oilfield Services sector only

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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International rig activity fell 13% last year, as flat activity in the Middle East partially mitigated declines in other regions more in line with capex spending ~21% lower last year. We expect these trends to persist, though total reductions should accelerate (-16% in our forecast) as longer cycle international spending adjusts to continued low oil prices, falling ~23% y/y. Notably, we foresee further activity declines into 2017 as per our NOC and IOC capex budget surveys which point to ~10% y/y declines. Our JPM Oil Services team sees declines of ~5% in 2017 international rig count and up ~10% in 2018 while offshore rigs are set to decline ~10% in 2017 after down ~20% in 2016 and a further decline on ~10% in 2018.

Table 103: Annual Average Rig Count - Historical and JPMe

	2009	2010	2011	2012	2013	2014	2015	2016E	2017E	2018E
U.S. Oil	275	587	996	1,359	1,373	1,527	754	370	460	740
U.S. Gas	799	941	885	556	383	333	227	86	87	108
U.S. Total	1,075	1,528	1,881	1,915	1,756	1,859	981	456	547	849
Canada Oil	N/A	N/A	271	262	234	218	84	53	70	94
Canada Gas	N/A	N/A	136	103	120	162	107	75	93	117
Canada Total	223	347	406	364	354	380	192	129	163	211
NAM Total	1,298	1,874	2,288	2,279	2,110	2,239	1,173	585	711	1,060
Middle East Land	220	229	253	309	329	360	356	335	330	377
Middle East Offshore	32	35	39	47	44	46	50	48	43	42
Asia Pacific Land	136	150	151	144	142	138	126	107	105	124
Asia Pacific Offshore	107	120	106	97	103	116	93	72	69	67
Latin America Land	281	308	338	342	332	323	257	192	187	229
Latin America Offshore	75	76	86	82	86	74	62	51	42	34
Africa Land	48	57	51	64	90	94	74	59	58	67
Africa Offshore	13	26	27	32	36	40	32	25	20	16
Europe Land	36	45	70	73	85	95	71	60	56	68
Europe Offshore	47	49	48	46	50	50	46	35	33	30
International Total	997	1,094	1,167	1,234	1,296	1,337	1,167	984	945	1,054
Int'l Land Total	722	789	863	931	978	1,011	884	753	736	865
Int'l Offshore Total	275	305	304	303	318	326	283	231	208	189
Global Total			3,455	3,513	3,407	3,576	2,339	1,570	1,655	2,113

Source: Baker Hughes and J.P. Morgan estimates.

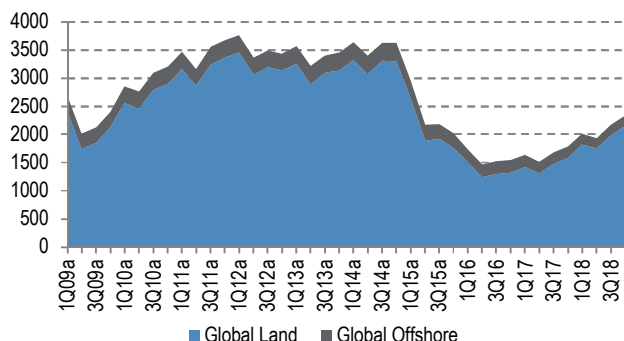
As per our conversations recently at OTC, not surprisingly, North American onshore is expected to recover first, with deepwater last. There were pockets of optimism with respect to NAM onshore activity in 2H16, but we'd say the majority of industry executives we spoke with expect balance sheet repair to trump capex even if the oil price holds in from current levels. Although improving stock prices were welcomed by the industry, many executives expressed concern over growing expectations from equity investors, particularly for 2H16. Customer discussions are picking up (off an awfully low base from mid-1Q) though few have anything concrete at this stage, and memories of last summer's flirtation with rig additions remain front of mind for many. Internationally, conventional land and shallow water could "turn on" reasonably quickly, even in markets where rig count has fallen as much as 75% off peak. Improved cash flow (from higher oil prices) could spur incremental demand in markets with fairly healthy volumes today like the GCC countries, Argentina and Russia, though most Latin American producers' activity is expected to remain challenged (perhaps save Colombia).

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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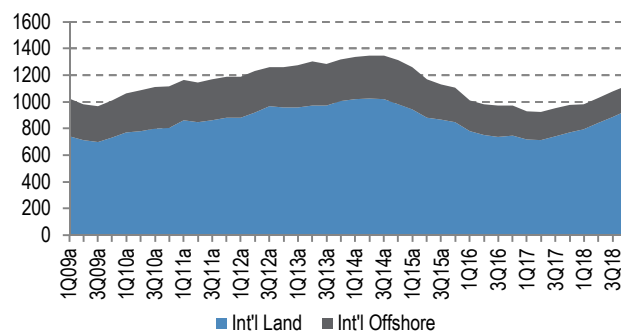
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Figure 127: Global Rig Count



Source: Baker Hughes and J.P. Morgan estimates.

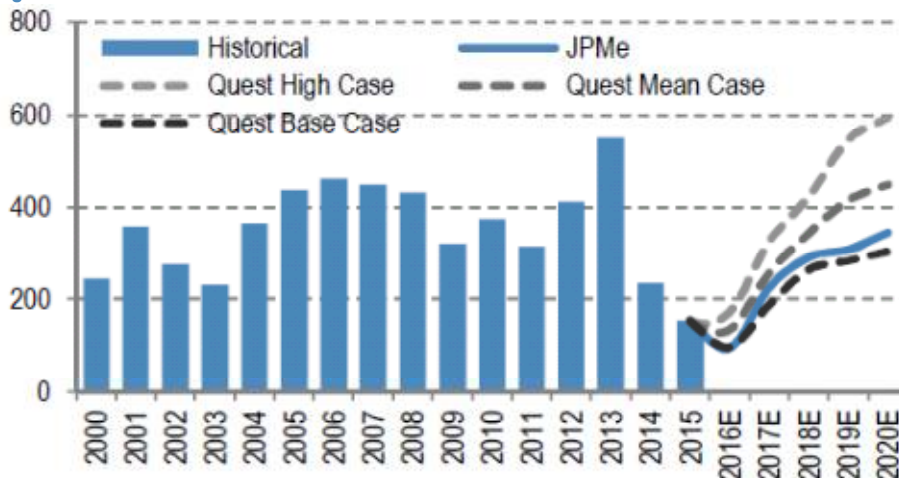
Figure 128: International Rig Count



Source: Baker Hughes and J.P. Morgan estimates.

Looking at the latest subsea tree awards forecast from our JPM Oil services analyst Sean Meakim shows massive declines in activities from 2013 levels with a return back to prior peaks not likely even by 2020. Despite the broad-based downward revision to 2016 estimates recently, Quest still projects ~50% y/y growth in tree awards and continues to bake in some probability of major projects.

Figure 129: JPM v. Quest Subsea Tree Forecasts



Source: IHS Petrodata, Bloomberg, J.P. Morgan estimates.

As per conversations at the OTC conference last week, offshore equipment providers are trying to brace themselves for a "sub-100 tree world" through 2017. There is more optimism that the recent modestly higher oil price and the ongoing offshore cost deflation cycle could intersect in 2017 to drive a modest uplift in FIDs for those furthest along in their development, which could boost equipment orders more meaningfully in 2018 and beyond. Relations with Petrobras remain strained for many, and the company's procurement process remains a quagmire; meaningful orders from Brazil may not materialize before 2019. With capex dollars scarce, competition is intense for "onesy-twosy" brownfield awards tied to existing infrastructure.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 130: Global Subsea Tree Awards to Watch in 2016

Operator	Project	Province	Status	Trees	Bid	Award	Startup	Bid Remark
Woodside	Browse FLNG WA-32-R	Australia	FEED	18	Mar-16	Oct-16	4Q20	OneSubsea favored
Anadarko	Golfinho Atum (Area 1) Phs 1	Mozambique	FEED	22	Jun-16	Dec-16	4Q19	FMC Technologies favored
Royal Dutch Shell	Vito MC984	GOM-US	FEED	15	Jan-16	Jun-16	1Q20	
Eni	Etan/Zabazaba OPL245 Phase 1	Nigeria	Bidding	11	Jul-14	Dec-16	2Q19	
Petrobras	Libra Bm-S-11 Phs 2	Brazil	Bidding	18	Jan-16	Nov-16	1Q21	
Petrobras	Libra Pilot Bm-S-11 Phs 1	Brazil	Bidding	18	Jan-16	Oct-16	2Q20	
Ophir	Block R FLNG (Fortuna, Viscata)	Equatorial Guinea	Bidding	10	Sep-15	Mar-16	4Q19	OneSubsea favored
Total	Pazflor Phase 2	Angola	Bidding	9	Jan-16	Oct-16	2Q18	FMC Technologies awarded
BP	Atlantis Phs 2B	GOM-US	FEED	8	Mar-16	Sep-16	2Q18	
Woodside	Greater Enfield	Australia	FEED	10	Jun-16	Dec-16	1Q20	FMC Technologies awarded
Eni	Coral South FLNG (Area 4)	Mozambique	Bidding	6	Jan-16	Oct-16	3Q20	
Energi MP	Kangean Psc Tsb Phase 2	Indonesia	Bidding	4	Aug-14	Jan-16	4Q17	
Hess	Stampede Phs 1 GC468/512	GOM-US	Bidding	6	Mar-14	Apr-16	2Q18	FMC Technologies awarded
LLOG	Crown & Anchor VK959	GOM-US	Bidding	4	Oct-15	Mar-16	3Q17	FMC Technologies favored
Eni	Zohr Phs 1 (Shorouk Blk)	Egypt	Bidding	5	Oct-15	Mar-16	4Q17	
Centrica	Butch Main 8/10 (Sstb To Ula)	N Sea, Norway	Bidding	3	Oct-15	Jun-16	1Q19	
Noble Energy	Troubadour MC699	GOM-US	FEED	4	Mar-16	Oct-16	3Q18	
ExxonMobil	Hebron Pool 3 Subsea	Canada NE	Bidding	3	Jan-15	Aug-16	3Q18	
LLOG	Oruse MC895	GOM-US	FEED	3	Mar-16	Oct-16	1Q18	FMC Technologies favored
Royal Dutch Shell	Penguins Redevelopment	N Sea, UK	FEED	5	Jan-16	Jun-16	1Q19	FMC Technologies favored

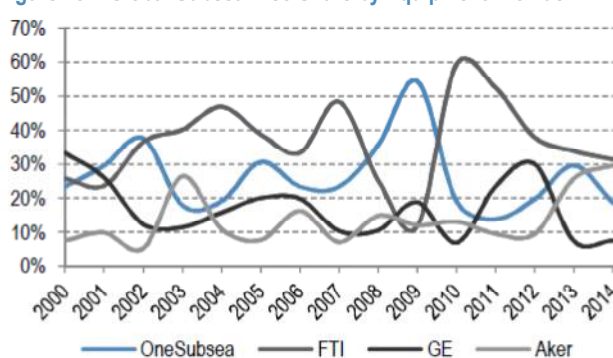
Source: J.P. Morgan estimates, Quest Offshore

Figure 131: Global Subsea Tree Share by Operator

Global	Flowing	OneSubsea	FTI	GE	Aker
Market	4,819	27%	39%	13%	21%
Petrobras	19%	36%	37%	13%	16%
Stabil	12%	2%	50%	45%	9%
Total	8%	29%	57%	24%	1%
Shell	7%	5%	53%	2%	38%
ExxonMobil	6%	33%	34%	1%	51%
BP	6%	39%	48%	0%	17%
Chevron	3%	31%	29%	0%	35%
ENI	2%	37%	30%	2%	63%

Source: J.P. Morgan estimates, Quest Offshore

Figure 132: Global Subsea Tree Share by Equipment Provider



Source: J.P. Morgan estimates, Quest Offshore

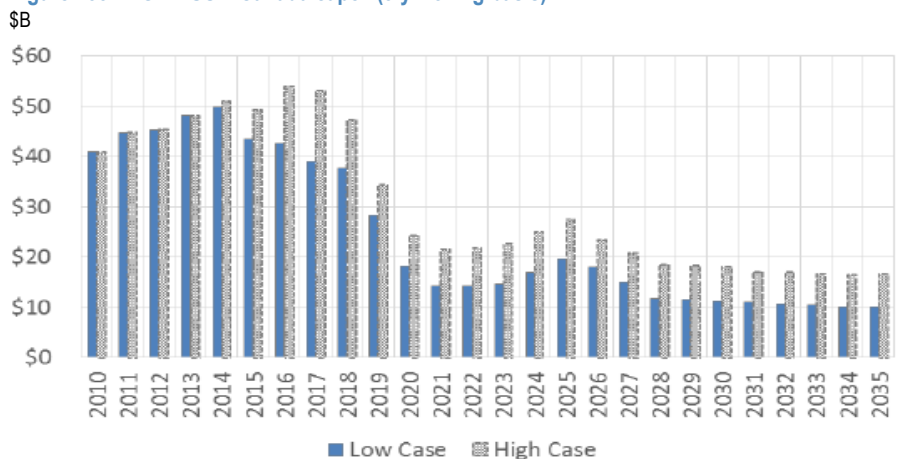
Midstream the next shoe to drop: Last month, INGAA (Interstate Natural Gas Association of America) revised down its midstream infrastructure investment (US + Canada) forecast over the 2015-2035 period by ~20-25% from \$640bn to \$495bn to reflect prolonged weakness in oil and natural gas prices and subsequent slowdown in investment activity. Looking at near-term capex (US + Canada) on a rolling 3-yr basis, capex is set to decline y/y every year for the next 5 years with 2016 the peak year for spending and 2020 spending expected to be ~50% below 2016 levels. With upstream activity set to bottom this year, we see the next leg of Oil & Gas impacts coming in midstream/downstream which should start to hit in 2H16 and 2017.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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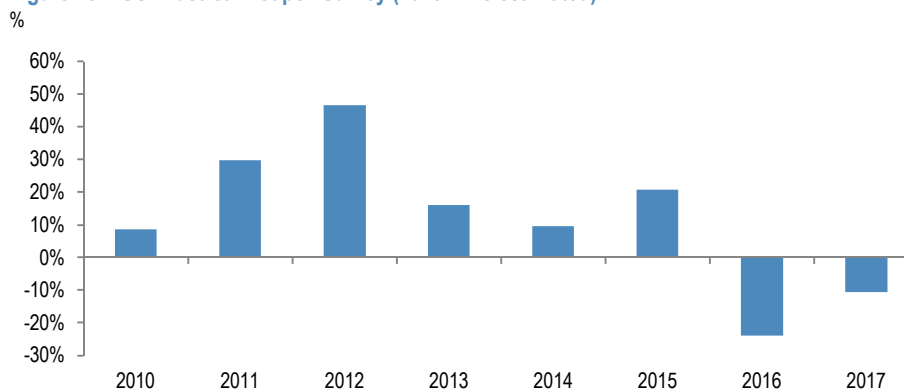
Figure 133: INGAA US + Canada capex (3-yr rolling basis)



Source: INGAA

Indeed, a look at growth rates at our own survey set of ~\$40B in midstream capex from US companies, shows 2016 capex down ~15-20% with another leg down in the ~10% range in 2017. We would not be surprised to see further cuts as companies make efforts to conserve cash and lower their leverage ratios. Indeed, Kinder Morgan, which is currently levered at ~5-6x net debt/EBITDA, recently cut dividends by ~75% to fund expansion of projects. Last week, the company cut capex further by ~\$900mm from the prior Dec'15 target of \$4.2B for 2016, now down ~20% vs 2015 levels. In addition, Plains All American, one of the oil-centric pipeline plays, had said that things were worse than it expected, and capex of \$2.2B in 2015 year will be down 25-30% in 2016, highlighting that its maintenance capex is \$200-225 mm, showing that growth spending is at a relatively high level, and in the longer term it sees plenty of capacity and no need for capex to get the uplift from current resources.

Figure 134: US Midstream Capex Survey (2015-17 is estimated)



Source: Bloomberg. Note: Includes 17 public midstream players and \$40 B of capital spending.

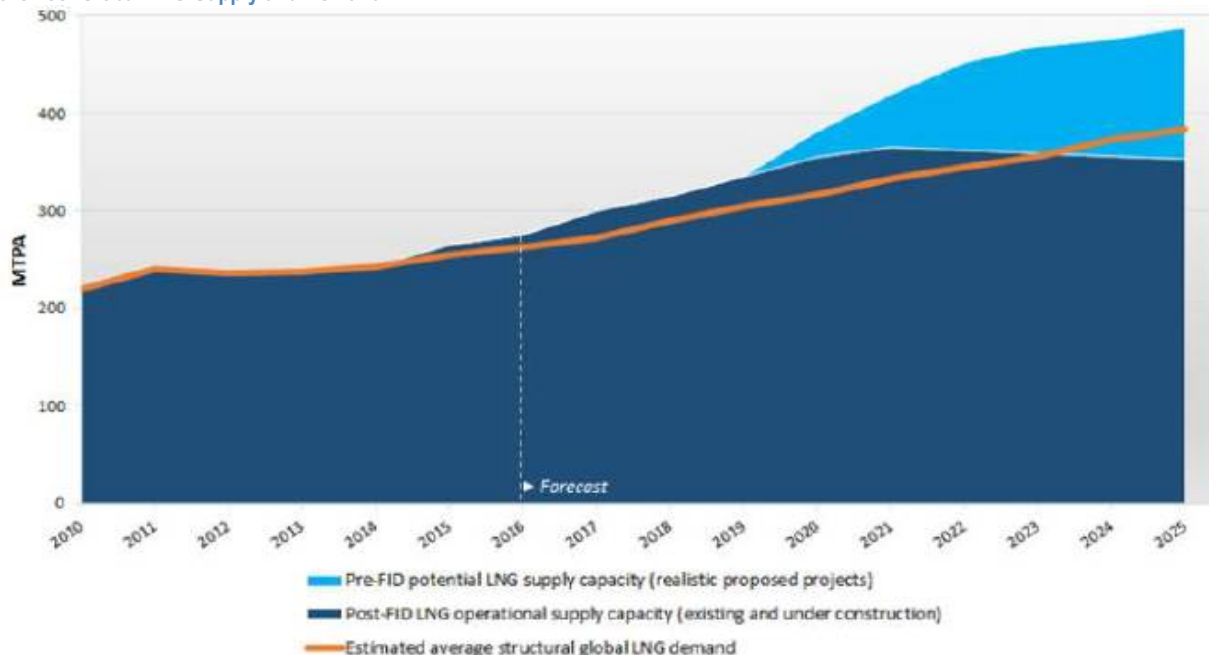
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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Furthermore, at the LNG conference in Perth last month, the messaging on the market was overwhelming bearish (click [here](#) for JPM's takeaways note). There was little debate that the market is substantially over-supplied and is likely expected to remain so for the next decade. Consumers are taking advantage of the weak market conditions to impose greater flexibility in contract terms to shift volume risk to suppliers which is likely to stymie further large-scale development.

Figure 135: Global LNG Supply and Demand



Source: Galway Research

Figure 136: Supply-demand balance up to 2025



Source: Berkeley Research

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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Also, as per our meetings at OTC earlier this year and at the Turbomachinery convention in Houston earlier this year, the tone on pipelines was cautious, making note of the lagging impact of takeaway capacity spend versus production, though this should not be as bad as the decline seen in the upstream market—our current survey of midstream capex shows a ~10% decline for next year. Outside the US, China was highlighted as still seeing strong activity and potential from the deals with Russia. Participants note the ~40% decline in LNG price (last 12 months) and all the capacity planned/under construction/coming on line in the next few years. The consensus is that the economics for 85% of proposed projects (as large as 900 MTPA, ~250 MTPA to be added in 2015) are uneconomic at current levels. Additionally, the phasing of new projects could be unpredictable and lead to air pockets in the trajectory, with one rep we met with saying he was sure activity would be down in 2016. At OTC, Siemens/DRC noted that LNG projects are still rolling off in '17 which will go close to zero in '18 and that the oversupply in the market is a challenge. The bottom line is that the supply-demand imbalance is expected to deepen in forward years, there is a high likelihood of a roll back on expansion and new capacity plans starting in late 2016/2017. GE has ~5% overall revenue exposure to LNG markets with majority coming from the Turbomachinery sub segment within the Oil & Gas segment.

How bad does 2017 need to be to see growth in 2018?

Given the order profile in recent quarters, there is little doubt that 2017 is likely to be another down year for GE Oil & Gas, with equipment down more than services. The question is how bad could 2017 be, or how bad does 2017 need to get to see a recovery in 2018. In other words, can we see declines extend through 2018? We try to gauge this by first looking at high level industry forecasts for GE's Oil & Gas verticals. Offshore/subsea comprises ~35% of revs, followed downstream at ~20%, LNG/pipelines ~15-20%, onshore upstream ~20% and wider industrial ~10-15%. We summarize end market commentary across these verticals below, along with related charts. In a nutshell, offshore and mid/downstream are set to see incremental declines going forward. This will be somewhat offset by onshore upstream and stability in wider industrial markets.

Table 104: Peak to Trough Weighted Declines

	Revenue Breakup	Sub-segments	End Market Comments
Offshore/subsea	35%	Drilling/Subsea, Digital Solutions, Turbomachinery	JPM Analysts expect a peak to trough decline of ~42% in offshore rigs
Onshore upstream	10-15%	Surface, Digital Solutions	27% decline in international rigs and ~75% decline in US rigs peak to trough
LNG/pipeline	15-20%	Turbomachinery, Digital Solutions	INGAA sees ~50% peak to trough decline in Midstream capex through 2020
Downstream	20%	Downstream Technology, Turbomachinery	Slight decline at pure refiners, integrates capex expected to be down 33% peak to trough
Wider Industrial	10-15%	Digital Solutions, Turbomachinery, Downstream Technology	
Total	100%		

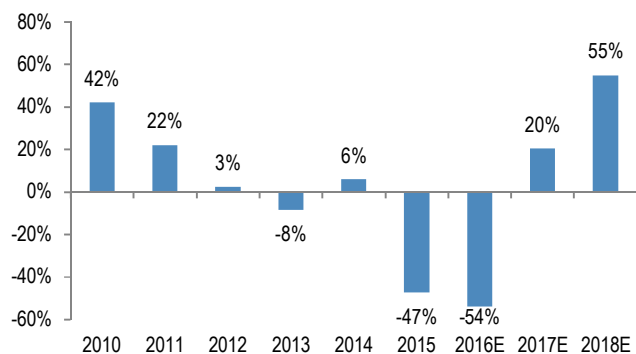
Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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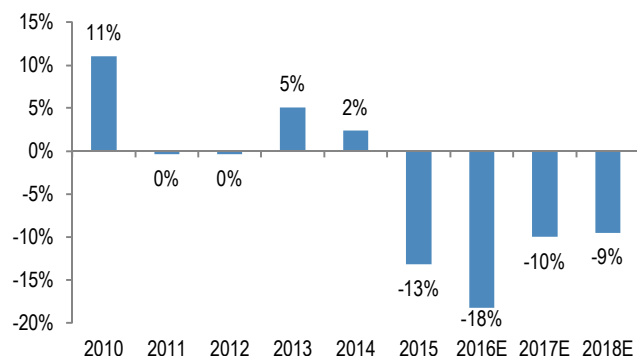
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Figure 137: US Onshore Rig Counts JPMe



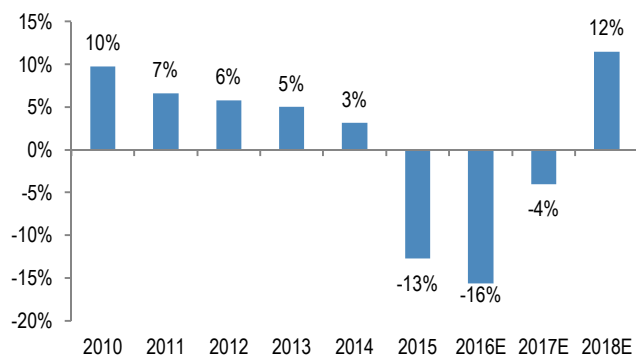
Source: Company reports and J.P. Morgan estimates.

Figure 138: US International Offshore Rig Counts JPMe



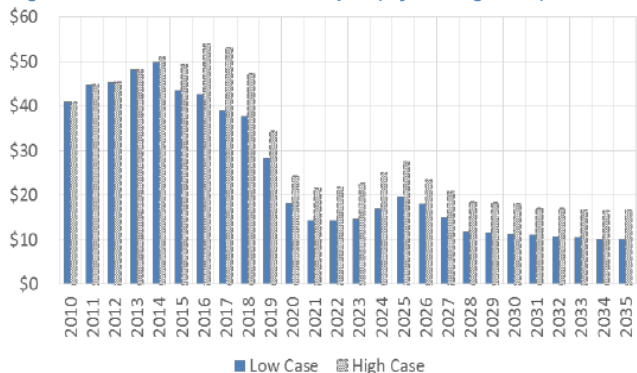
Source: Company reports and J.P. Morgan estimates.

Figure 139: US Overall International Rig Counts JPMe



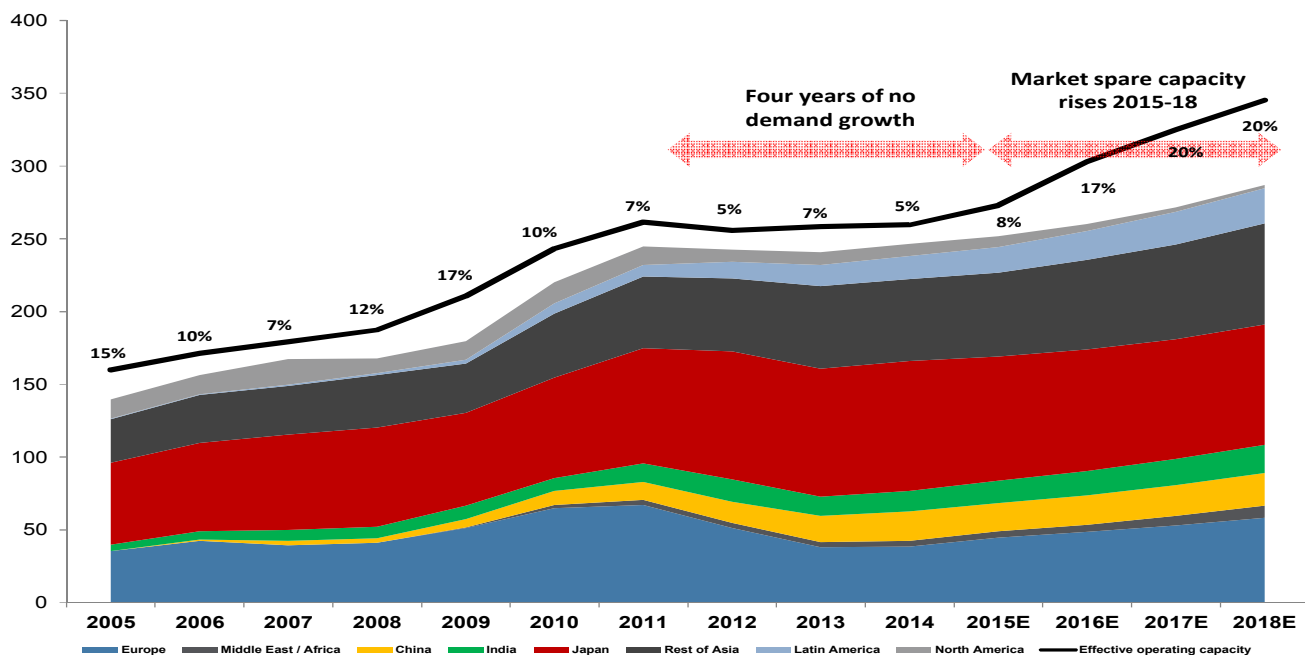
Source: Company reports and J.P. Morgan estimates.

Figure 140: INGAA US + Canada capex (3-yr rolling basis)



Source: INGAA

Figure 141: LNG capacity growth to outpace LNG demand growth to 2020



Source: Company data, J.P. Morgan estimates. *Effective capacity adjusts for capacity losses and assumes 95% plant utilization

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Comparable long-cycle oil & gas services/equipment peers like CAM (standing estimates prior to SLB acq), FMC and DRQ are expected to see revenue declines through 2017, as per consensus estimates before recovering in 2018. We see that the peak to trough revenue decline is expected to be an average ~40% for these three companies, with FTI down ~42%, CAM down ~37% and DRQ down ~47%.

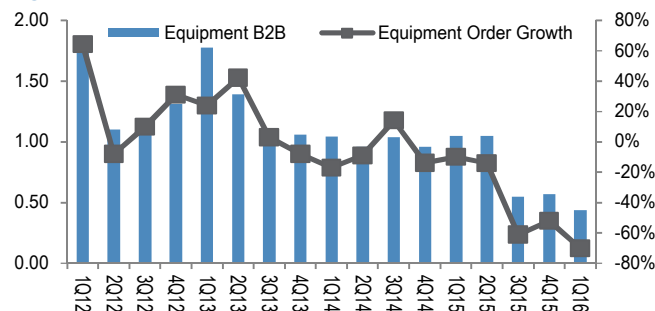
Table 105: Peak to Trough Weighted Declines

2014-2017 Indexed Revenue Decline	
FTI	-42%
CAM	-37%
DRQ	-47%
Weighted Average	-40%

Source: Company reports and J.P. Morgan estimates.

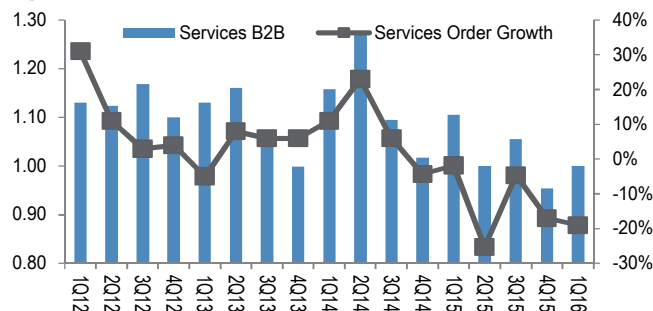
Our standing estimates call for GE's Oil & Gas revenue to decline ~33% peak to trough from 2014-2017 before growing again in 2018, but using the above analogy, there is likely some downside risk to these estimates. We note, however, that GE's service business accounts for ~50% of annual revenues now and B2B here has been fairly resilient at >1 for 4 out of last 5 quarters, a buffer to equipment headwinds. However, orders have still been down and the short cycle nature here, not related to onshore US rig counts suggests visibility on a bottom is limited.

Figure 142: Oil & Gas Equipment B2B



Source: Company reports and J.P. Morgan estimates

Figure 143: Oil & Gas Services B2B



Source: Company reports and J.P. Morgan estimates

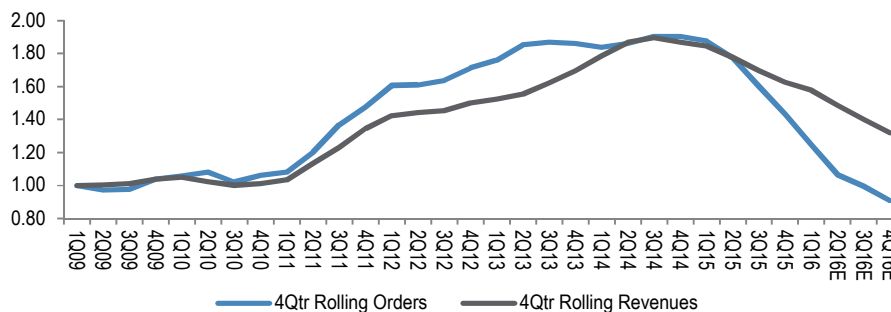
Finally, looking at indexed orders vs revenue growth at GE since the last downturn shows that there is likely a prolonged downside for revenues before they recouple with recent order trends. As of 1Q16 there is already a ~20-25% disconnect between orders and revenues and assuming a flat order environment from current levels through the end of 2016 would imply revenue's need to fall a further ~30-35% from year end 2016 levels, before they recouple with orders.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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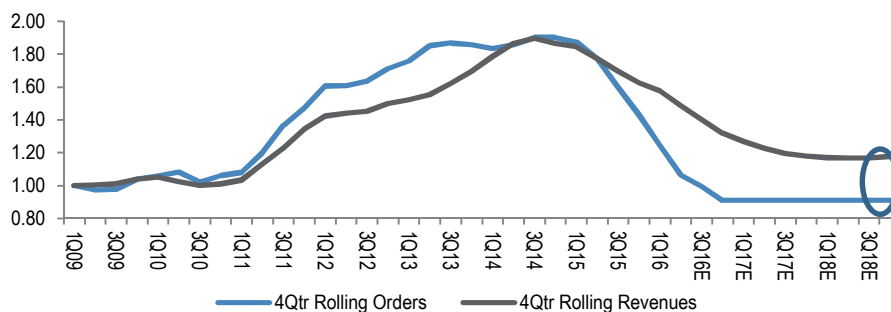
Figure 144: 4Qtr rolling indexed revenues and orders



Source: Company reports and J.P. Morgan estimates.

Our estimates currently assume a further ~10% decline in 2017, and flat growth in 2018, and unless we see some form of rebound in orders between 2016-end and 2018, we see further downside risks to our estimates. If orders were to stay flat at current levels through 2018, our revenues estimates would need to come down a further 20-25% before recoupling with orders.

Figure 145: 4Qtr rolling indexed JPMe revenues in a flat order environment through 2018



Source: Company reports and J.P. Morgan estimates.

We provide a summary of our sub-segment model below before delving into the individual sub-segment dynamics in detail. In the near-term, the drilling/subsea and surface sub-segments are expected to remain the most pressured before surface recovers somewhat in 2017, while Turbomachinery should see continued significant decline in 2017 and some in 2018 before normalizing at lower levels. All-in, we model ~17% organic declines in 2016, followed by mid-single digit declines in 2017, and slight growth in 2018.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 106: Oil & Gas Sub-segment Revenue Model

	2015	2016E	2017E	2018E
Turbomachinery	5,105	4,132	3,486	3,369
Equipment	2,392	1,555	1,166	1,049
Services	2,713	2,577	2,320	2,320
Drilling/Subsea	4,304	3,204	2,619	2,460
Equipment	3,031	2,122	1,591	1,432
Services	1,273	1,082	1,028	1,028
Downstream Technology	2,542	2,266	2,146	2,170
Equipment	1,491	1,267	1,172	1,172
Services	1,051	998	973	998
Surface	2,192	1,471	1,661	1,949
Equipment	1,411	847	974	1,193
Services	781	625	687	756
Digital Solutions	2,303	2,073	1,969	1,969
Services	2,303	2,073	1,969	1,969
Subtotal - Oil & Gas (current reporting structure)	16,446	13,146	11,881	11,917
Equipment	8,325	5,790	4,903	4,847
Services	8,121	7,355	6,977	7,070
Y/Y growth (including FX/Acquisitions)				
Turbomachinery		-19%	-16%	-3%
Equipment		-35%	-25%	-10%
Services		-5%	-10%	0%
Drilling/Subsea		-26%	-18%	-6%
Equipment		-30%	-25%	-10%
Services		-15%	-5%	0%
Downstream Technology		-11%	-5%	1%
Equipment		-15%	-8%	0%
Services		-5%	-3%	3%
Surface		-33%	13%	17%
Equipment		-40%	15%	23%
Services		-20%	10%	10%
Digital Solutions		-10%	-5%	0%
Services		-10%	-5%	0%
Subtotal - Oil & Gas (current reporting structure, including FX)		-20%	-10%	0%
Equipment		-30%	-15%	-1%
Services		-9%	-5%	1%

Source: Company reports and J.P. Morgan estimates.

Turbomachinery: Midstream is >50% of sub-segment revenue in Turbomachinery, and within midstream GE has little exposure to pipelines, with the majority of revenues coming from LNG terminals. Offshore platforms (primarily FPSOs) are a sizeable piece of the business into which the company sells compressor trains. Revenues here are project-driven and can be lumpy (down double-digits in 2015), and we see challenges increasing through the rest of the decade. We acknowledge that the trend towards gasification is expected to continue over the long-term, but this is unlikely to be a linear progression with risks from policy measures and geopolitics.

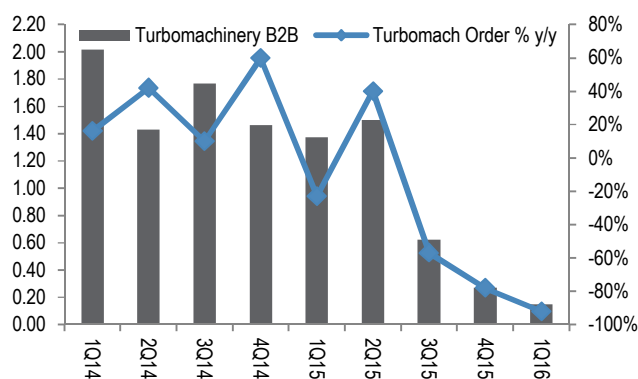
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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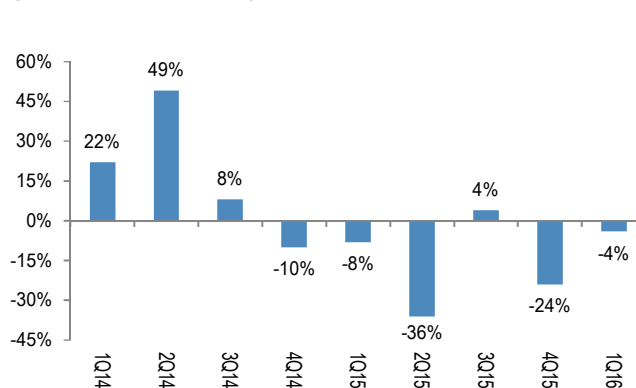
As we highlighted in the macro debates section, given the new norm of lower oil and gas prices, customers are re-assessing their long-term budgets. INGAA expects midstream capex to see significant declines going forward (near-term US + Canada is set to decline y/y every year for the next five years, with 2016 the peak year for spending and 2020 expected to be ~50% below 2016 levels). Pricing is also expected to get tougher given industry overcapacity, and a similar number of competitors vying for only select number of projects. Indeed, equipment order growth in the heavily midstream exposed Turbomachinery sub-segment has started to see sharp declines in orders, with an equipment B2B of 0.15x in 1Q, as projects started in 2013/2014 near completion.

Figure 146: Turbomachinery Equipment B2B and Order Growth



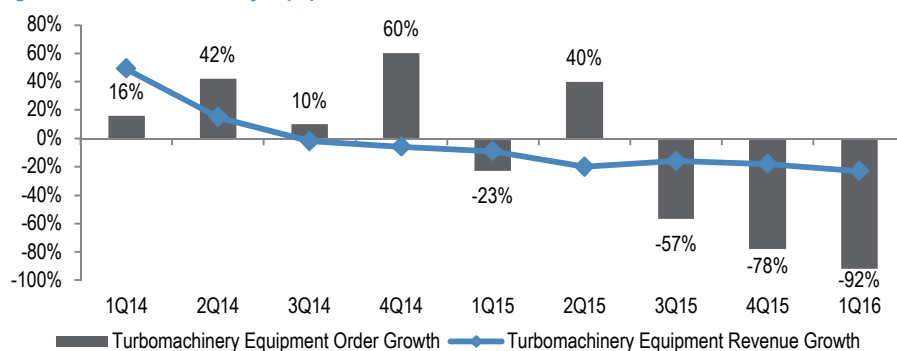
Source: Company data.

Figure 147: Turbomachinery Service Order Growth



Source: Company data.

Figure 148: Turbomachinery Equipment Revenue vs Order Growth



Source: Company reports and J.P. Morgan estimates.

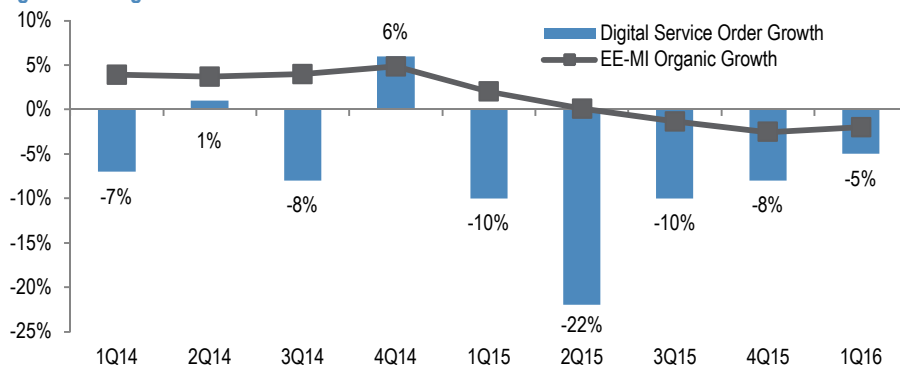
Digital Solutions (called M&C before): This sub-segment provides equipment services for a wide range of industries, including oil & gas, power generation, aerospace, metals, and transportation (overall 40% Oil & Gas related, 60% general industrial). The offerings include sensor-based measurement, flow and process control equipment, turbine, generator and plant controls and condition monitoring, as well as pipeline integrity solutions. While all of the revenue here is classified as services, this is a more transactional type of sale rather than a steady recurring stream, making this sub-segment highly prone to industry headwinds. Indeed, while not as large of a decline as pure onshore oil/gas levered names, this segment has seen declines well in excess of EE/MI group averages, showing its a services stream that is far from "safe".

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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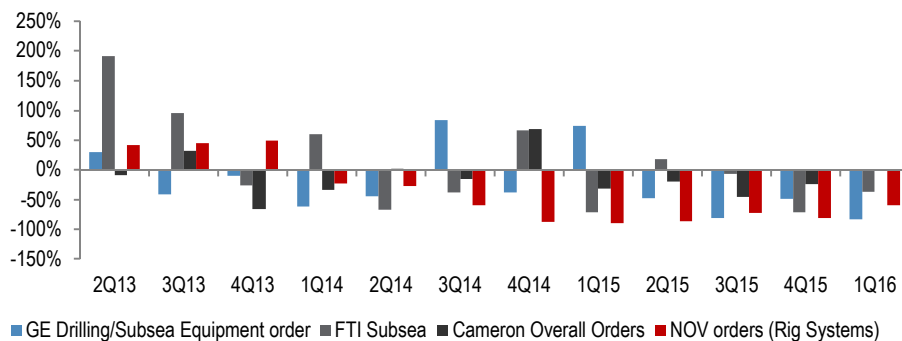
Figure 149: Digital Solutions Service Order Growth vs EE-MI Revenue Growth



Source: Company data.

Drilling/subsea: This sub-segment is likely to see the most pressure in 2016 due to the long cycle nature of activity here. Orders have started to see significant pressure, with equipment orders down ~80% in 1Q (down ~60-70% on a 4-qr rolling basis). Looking at order dynamics at key peers, FTI, NOV and Cameron, we don't think GE is losing share here, as recent sharp weakness is more a function of general industry lumpiness and customer specific order dynamics. While we see potential for onshore drilling in North America to pick up meaningfully in 2017, this will be somewhat offset by continued declines in international onshore, while international offshore markets, where this sub-segment is most exposed, are expected to see continued declines through 2018 given the lagging and long-cycle nature of related projects.

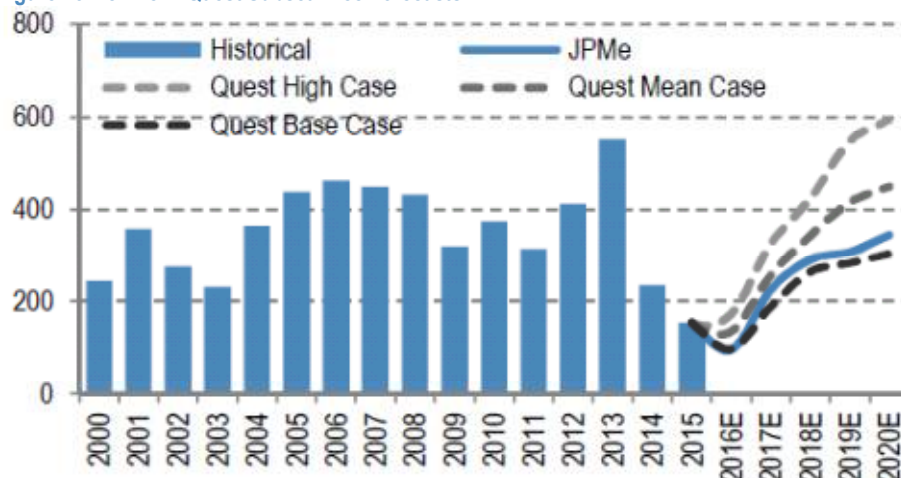
Figure 150: Oil & Gas Subsea Order Growth GE vs Peers



Source: Company Reports. For GE, prior to 1Q15 orders growth is just for Subsea. Cameron was acquired by SLB in 1Q16

The latest subsea tree awards forecast from the JPMorgan Oil Services team shows massive declines in activity from 2013 levels, with a return back to prior peaks unlikely even by 2020.

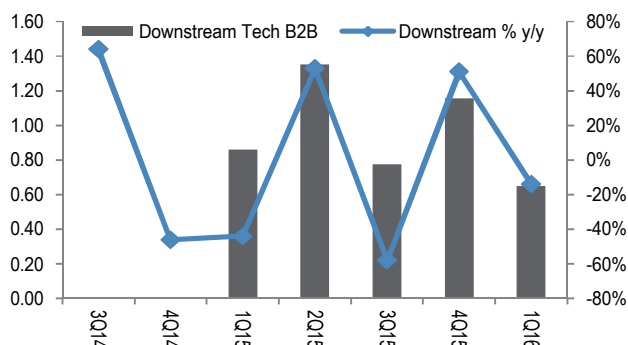
Figure 151: JPMe v. Quest Subsea Tree Forecasts



Source: IHS Petrodata, Bloomberg, J.P. Morgan estimates.

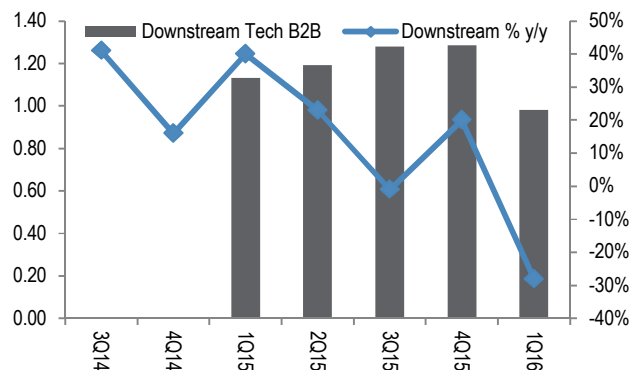
Downstream Technology: Trends here are mixed as the segment is exposed to refining, petrochem, and industrial, as well as distributed gas end markets. B2B has been lumpy for the equipment side, while services have been fairly resilient.

Figure 152: Downstream Technology Equipment B2B and Order Growth



Source: Company data.

Figure 153: Downstream Technology Service B2B and Order Growth



Source: Company data.

This segment also houses the Cameron Reciprocating Compression business acquired in late 2014. On this front, growth capex at contract compression customers like APLP, CCLP and USAC (accounting for ~30% of wellhead and gathering compression) shows a big drop in 2016 and 2017, implying weakness is still on the come for this part of the business.

Table 107: Capex for Contract Compression Customers

\$mm	2015	2016E	2017E
APLP	229	105	108
CCLP	95	13	24
USAC	281	45	46
Total	606	163	178

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

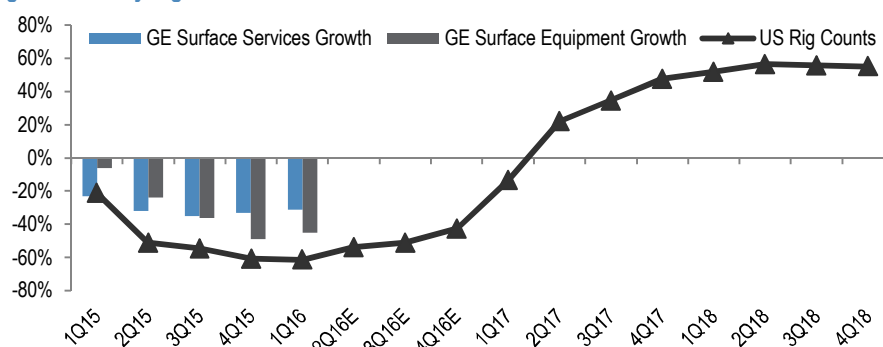
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Overall, this sub-segment has held up relatively better than others, but exposure here is more long-cycle in nature, with impacts likely in late 2016 and 2017+.

Surface: This sub-segment is most exposed to US rig count activity, which has been reflected in revenue trends, down ~30% y/y for both equipment and services. 1Q was likely the worst quarter from a y/y perspective, with comps getting easier through the course of 2016 and a solid rebound expected in 2017. Dynamics here have been unpredictable throughout the year and largely depend on oil price stability, which is still a TBD.

Figure 154: Qtrly Rig Count Forecast vs GE Surface Revenue Growth



Source: BHI, J.P. Morgan estimates.

Profit Dynamics – Pricing and Volume Declines Outweigh Productivity Saves

We believe as of 2015 that Oil & Gas was as poorly run an industry from a project execution perspective as airlines were 15 years ago. Every project has bespoke engineering with very little standardization, and we see this structural change happening over the next few years, which should ultimately mean structurally lower margins longer term. Recapping 2015 and 1Q16 trends for GE, after backing out the ~\$600mm in cost savings and acquisition/fx related headwinds (as provided by management), we see core decrements of ~75% for the Oil & Gas segment in 2015 and ~50% in 1Q16.

Table 108: Oil & Gas Alternate Margin Bridge 1Q16

Oil & Gas	Revenue	Growth	Profit	Inc/Dec
Start 1Q Adjusted Base as per company	4007		485	
Core	(547)	-14%	(281)	51%
FX/Acquisitions	(146)		(26)	18%
Transactional FX			(70)	
Cost out (annual \$800mm)			200	
End 1Q16	3314		308	

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 109: Oil & Gas Alternate Margin Bridge 3QYTD15 prior to re-segmentation

Oil & Gas	Revenue	Growth	Profit	Inc/Dec
Start 3QYTD Adjusted				
Base as per company	13353		1761	
Core	(471)	-4%	(365)	77%
FX/Acquisitions	(991)		(247)	25%
Cost out			450	
End 3QYTD15	11891		1599	

Source: Company reports and J.P. Morgan estimates.

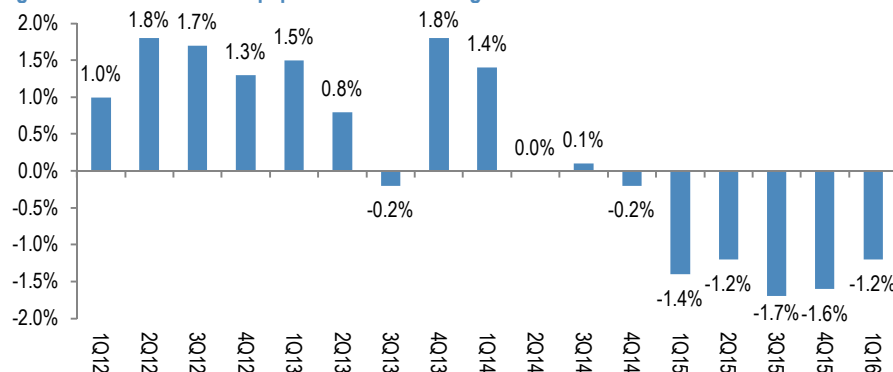
Table 110: Oil & Gas Alternate Margin Bridge 4Q15

Oil & Gas	Revenue	Growth	Profit	Inc/Dec
Start 4Q Adjusted				
Base as per company	5125		873	
Core	(333)	-6%	(265)	80%
FX/Acquisitions	(437)		(93)	21%
Cost out			200	
End 4Q15	4355		715	

Source: Company reports and J.P. Morgan estimates.

Commentary from the 10-Q/Ks shows that pricing has yet to turn negative (was flat for 2015), suggesting potential for worsening decrements this year (more on this in the 2016 discussion later in the report). GE hasn't seen a lot of margin erosion here yet (1Q being the first quarter of real headwinds), given that the company is still fulfilling longer cycle backlog that had solid pricing trends, coupled with the impact of accelerated restructuring driven saves. However, we see increased pressure for the rest of 2016 as productivity saves are offset by volume decrements and pricing pressure.

Figure 155: GE Oil & Gas Equipment Orders Pricing



Source: Company reports and J.P. Morgan estimates.

We see potential for ~300bps of y/y margin decline in 2016 as pricing pressure starts to flow through and y/y productivity savings moderate from 2015 levels. Raw material deflation should help slightly but is not enough to offset headwinds elsewhere. For 2017 and 2018, we model flattish margins for now as productivity saves offset pricing/volume headwinds (though this should moderate as weak large equipment order growth starts to comp and the mix transitions to more services).

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 111: Oil & Gas Segment Margin Bridge (Prior to 2014 as per old segmentation)

		2012	2013	2014	2015	2016E	2017E	2018E
Sales Start		13,608	15,241	17,341	19,085	16,450	13,149	11,884
Core		1,633	1,034	1,144	(885)	(2,808)	(1,265)	36
	Price	0	200	100	0	(500)	(250)	0
	Volume	1,633	834	1,044	(885)	(2,308)	(1,015)	36
Acquisitions		700	700	700	(150)	(90)		
Forex		(700)		(100)	(1,600)	(403)	0	0
Other				0				
Sales End		15,241	16,975	19,085	16,450	13,149	11,884	11,920
OP Start		1,660	1,924	2,357	2,758	2,427	1,512	1,194
Core		194	295	228	(129)	(1,431)	(568)	7
	Price	0	200	100	0	(500)	(250)	0
	Volume	194	95	128	(129)	(931)	(318)	7
Mix + Productivity		100	(100)	100	50	600	250	50
Inflation					50			
Acquisitions		70	60	98	(23)	(14)	0	0
Forex		(100)		(25)	(280)	(71)	0	0
Other								
OP End		1,924	2,178	2,758	2,427	1,512	1,194	1,252
Margin		12.6%	12.8%	14.5%	14.8%	11.5%	10.1%	10.5%
Core Margin		11.9%	11.3%	12.3%	14.5%	40.3%	31.3%	20.1%

Source: Company Reports, J.P. Morgan Estimates. *2014 onwards reported as mix, prior to that reported as productivity ex-restructuring saves estimated by JPM

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

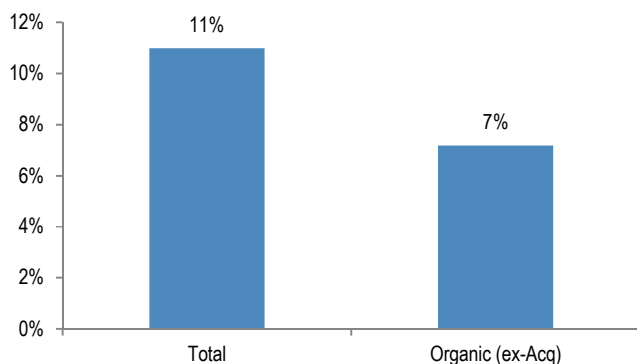
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Healthcare – Focus on Margin Expansion Near-term

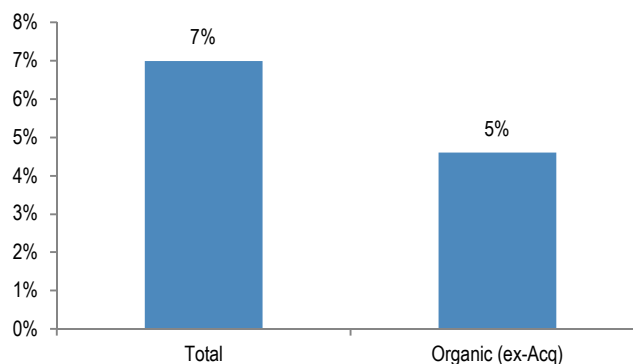
GE's Healthcare business has recently pivoted to more of a bottom line story than top line, with management's near to medium-term focus on cost take out and improving margins. The business faces secular challenges on core growth, with price down every year, offset by restructuring. Even as recent as Sept'15, GE was guiding this business for growth in '15, and it was down y/y. While there are pockets of growth opportunity, particularly in the \$4B Life Sciences business, it's primarily the \$1.5B bioprocess business that is "attractive" to us, growing revenues at a strong ~11% CAGR from 2007-2015 (~7% for Life Sciences overall), while the rest of the business, particularly diagnostics, is tied to imaging. We note that this 11% growth has been aided by a few acquisitions over the years, with the organic rate more like ~7% (~5% for Life Sciences), still solid and reinforced by strong growth at peers like PLL Life Sciences, which is seeing double digit growth in their bioprocess segment.

Figure 156: GE Bio Process Growth 2007-2015



Source: Company Reports

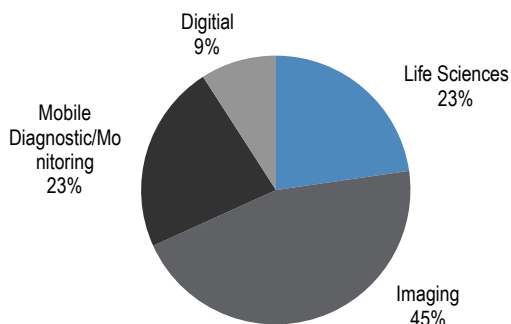
Figure 157: GE Life Sciences Growth 2007-2015



Source: Company Reports

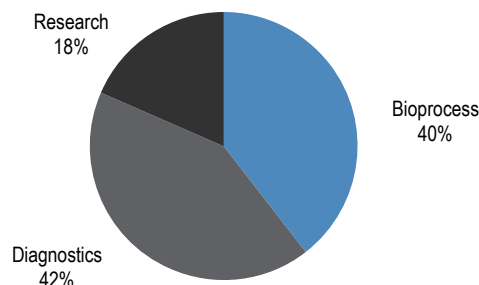
In addition, GE recently re-classified the old HCIT business as Digital, a ~\$1.6B business currently that is growing low single digits, with growth expected to remain in this range in the near term.

Figure 158: GE Latest Healthcare Portfolio Break-up



Source: Company Reports

Figure 159: GE Latest Life Sciences Portfolio Break-up



Source: Company Reports

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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That said, we expect some stabilization in Healthcare from a core growth perspective after a pickup in developed market growth in 2H15, which we see continuing into 2016 (recent order trends support this) - 1Q16 organic growth was solid at ~6% - with largely offsetting headwinds in developing markets. China remains a concern here, but management noted that the corruption campaign has slowed with private markets still putting up double digit growth (~20% of China revs). Underlying trends in the region remain solid, and growth should eventually rebound, but the timing and visibility is a TBD. Orders were flat to slightly up on a organic basis through 3Q15 YTD, but rebounded in 4Q15 and 1Q16 to a mid-single digit type rate, supporting low to mid –single digit organic growth for the segment in 2016. By sub-segment order growth has been solid in Life Sciences (up MSD to HSD), which we believe should lead segment growth in 2016. Net-net, we see similar trends continuing through 2017/2018 with a higher growth rate in Life Sciences, given exposure to fast growing biopharma markets.

Table 112: Healthcare Sub-segment Organic Revenue Growth Dynamics

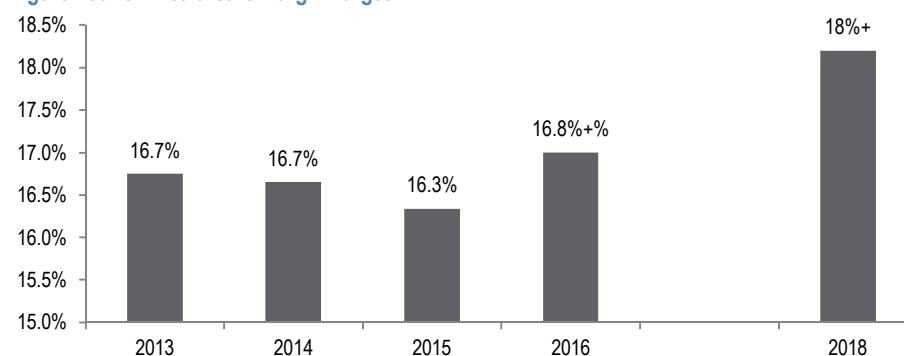
	2015 Revs (JPMe)	% of sales	2016E Y/Y	2017E Y/Y	2018E Y/Y
Healthcare system	12,042	68%	2%	3%	3%
Life Sciences	4,073	23%	8%	6%	6%
Digital	1,594	9%	4%	4%	4%
Organic Growth			4%	3%	3%

Source: Company reports

Profit Dynamics Key Going Forward

Moving to margins, at its Healthcare investor meeting in March this year, management clearly highlighted margin as the key priority over the next few years. Margins will be driven by product cost reduction, supply chain efficiencies and sourcing initiatives, as well as growth in Digital revenue which is margin accretive. They put out a 16.8% + margin target for 2016, with 18%+ by 2018.

Figure 160: GE Healthcare Margin Target



Source: Company reports and J.P. Morgan estimates.

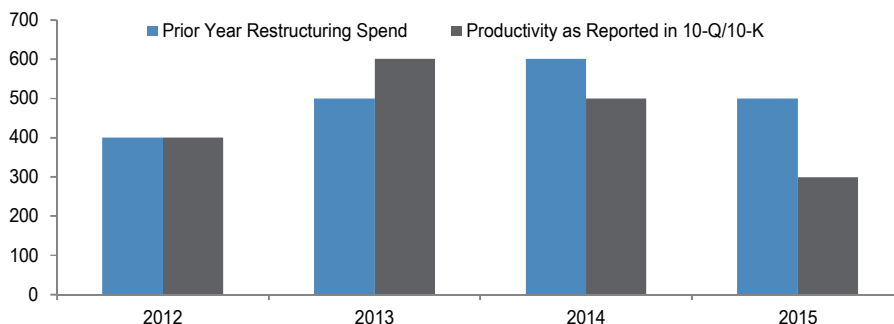
Looking back, management has executed strongly on productivity over the past 2 years, driven by heavy restructuring actions, more than offsetting pricing weakness.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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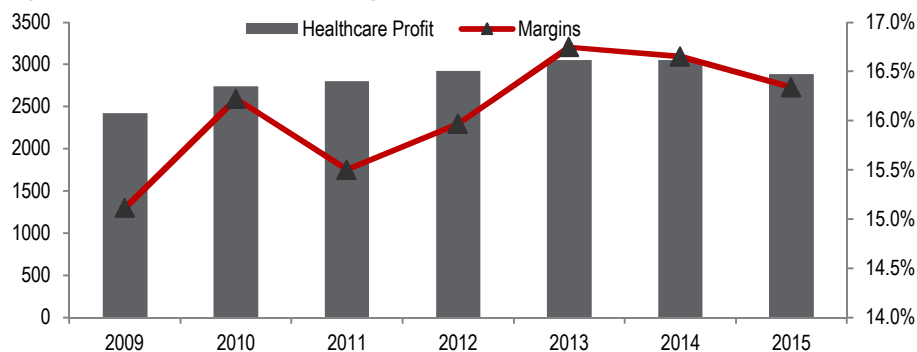
Figure 161: Healthcare Restructuring Spend vs Productivity



Source: Company reports and J.P. Morgan estimates.

However, margin improvement has been challenging over the long run despite initiatives in the past to reduce product cost (2008-2014 margin expansion has been flat on a cumulative basis). As per GE's 2014 Services meeting, 95% of revenue went through target ERPs as of 2014 vs ~75% in 2009, with inventory turns up to ~7x from 6x, shipment on time to 85% vs 58% prior, all of which on a net basis resulted in ~\$1B in savings over the 2009-2014 period. However, profit growth over that period shows just ~\$600mm in profit growth on ~\$2.2B in revenue growth (~3% revenue CAGR), roughly 30% incremental margins. This means a structurally challenging marketplace is eating into the savings from these initiatives and restructuring actions (~\$2B in cumulative spend over this period). We also highlight that the Life Sciences business has grown margins along with their revenue base over the last decade with 20%+ margin currently, implying the legacy imaging side of the business has likely seen margin declines during this period.

Figure 162: Healthcare Profits and Margins



Source: Company reports and J.P. Morgan estimates.

Table 113: Healthcare Margin Bridge 2009-2015

Healthcare Margin Bridge	Revenue	Profit	
Start 2009	16015	2420	Inc/Dec
Sales Growth	2,284	(373)	-16%
Product Cost Out Savings (as per Digital Presentation)		1,000	
Start 2014	18299	3047	

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Looking at the detailed historical margin bridge in the 10-K, even if we back the pricing related pressure, average core incrementals were just ~15% over the last 5 years.

Table 114: Healthcare Segment Margin Bridge Historical

	2011	2012	2013	2014	2015
Sales Start	16,897	18,083	18,290	18,200	18,299
Core	886	507	200	349	460
Price	(300)	(300)	(300)	(325)	(300)
Volume	1,186	807	500	674	760
Acquisitions					80
Forex	400	(400)	(200)	(250)	(1,085)
Other	(100)	100	(90)		(115)
Sales End	18,083	18,290	18,200	18,299	17,639
OP Start	2,741	2,803	2,920	3,048	3,047
Core	(238)	(183)	(172)	(239)	(177)
Price	(300)	(300)	(300)	(325)	(300)
Volume	62	117	128	87	123
Mix + Productivity	300	400	600	500	300
Inflation	(100)	(200)	(200)	(200)	(200)
Acquisitions					12
Forex	100		(100)	(63)	(100)
Other		100			0
OP End	2,803	2,920	3,048	3,047	2,882
Margin	15.5%	16.0%	16.7%	16.7%	16.3%
Core Incremental	5.2%	14.5%	25.6%	12.8%	16.2%

Source: Company Reports, J.P. Morgan Estimates

Going forward, improving volume growth (last 5 years organic growth was flat to up LSD) and increasing mix of high margin Life Sciences should help drive margin expansion. But this will continue to get offset by pricing pressure, which shows no signs of abating (1Q16 itself had ~\$100mm in pricing pressure compared to the annual ~\$300mm last year). Management has recently increased R&D investments (2H15), which we believe continues into 2016, but should be net neutral from a y/y benefit/headwind standpoint. Restructuring, meanwhile, remains steady, driving continued productivity savings. These include supply chain initiatives such as reducing single source suppliers from ~72% currently to ~50% by 2018, and increasing the number of brilliant factories from 5 currently to ~50 by 2018. On cost productivity, which explicitly drives gross margins, management targets ~\$350mm in savings in 2016, after delivering ~\$240mm in 2015 and ~\$110mm in 2014. In addition, divestitures of low margin businesses should be accretive to margins. As a for instance, the recently announced divestiture of Clariant was a ~10% EBITDA margin - ~10bps accretive to segment margin.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 115: Healthcare Segment Margin Bridge

	2014	2015	2016E	2017E	2018E
Sales Start	18,200	18,299	17,639	17,889	18,516
Core	349	460	723	626	648
Price	(325)	(300)	(300)	(275)	(275)
Volume	674	760	1,023	901	923
Acquisitions		80	(120)	0	0
Forex	(250)	(1,085)	(353)	0	0
Other		(115)			
Sales End	18,299	17,639	17,889	18,516	19,164
OP Start	3,048	3,047	2,882	3,041	3,259
Core	(239)	(177)	(26)	(82)	(82)
Price	(325)	(300)	(300)	(275)	(275)
Volume	87	123	274	193	193
Mix + Productivity	500	300	350	300	300
Inflation	(200)	(200)	(100)	0	0
Acquisitions		12	(12)	0	0
Forex	(63)	(100)	(53)	0	0
Other		0			
OP End	3,047	2,882	3,041	3,259	3,476
Margin	16.7%	16.3%	17.0%	17.6%	18.1%
Core Incremental	12.8%	16.2%	26.8%	21.4%	20.9%

Source: Company Reports, J.P. Morgan Estimates

With an estimated ~17% margin this year, the business is not that different from peers, suggesting that it is probably near its entitlement. This means margin improvement probably comes from volume leverage, mix, and continued execution on productivity initiatives. The bottom line is we see potential for some improvement in margin, but management has its work cut out (1Q16 started solidly at 6% organic growth and ~70bps y/y margin expansion).

Table 116: Healthcare Peer Segment Margins

Latest FY Actual	
Company	Segment Margin
Hologic	33%
Varian Medical	18%
Abbott Labs	16%
Baxter	13%
Siemens Healthcare	18%
Philips Healthcare	8%
Becton, Dickinson and Co	21%
Boston Scientific	14%
Average	18%
GE	17%

Source: Company Reports/Filings.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

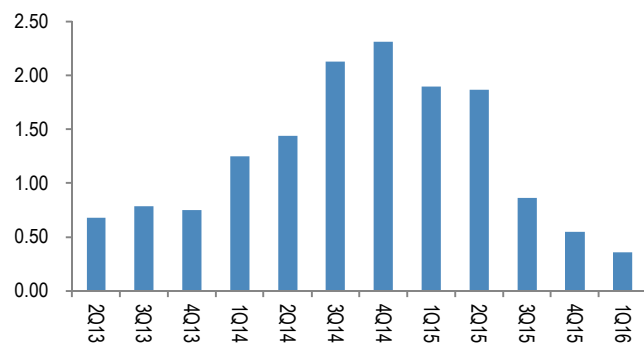
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Transportation – Lean Years Ahead

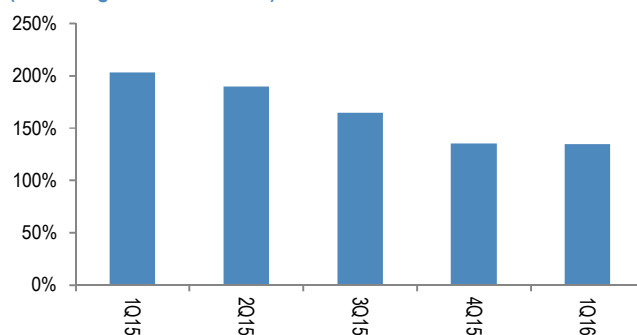
Transportation was a good story for GE in 2015 with ~100% market share in Tier 4 locomotive engines which helped drive strong order growth (~200%) for related equipment (including legacy Tier 3 engines) in 2014. However, orders in 2015 were weak excluding the India order, down 75% y/y with 3Q orders of just '3' locomotive engine units ~113 in 4Q and 'zero' in 1Q16 – showing the magnitude of weakness, some of which is understandable given the touch comp from 2015, but also a reflection of general macro trends like rail traffic in the US, which have been weak recently. The large India order of ~1000 locos received in 4Q15 is expected to start shipping from 2017 onwards through 2026, not a big needle mover from a y/y growth perspective.

Figure 163: Transportation Equipment B2B (ex-4Q15 India Order)



Source: Company reports and J.P. Morgan estimates.

Figure 164: Transportation Equipment Backlog/Equipment TTM Sales (Excluding 4Q15 India order)

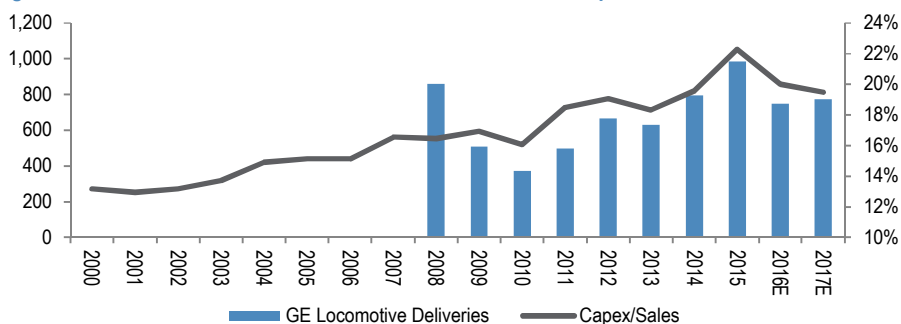


Source: Company reports and J.P. Morgan estimates.

Shipments in 2016 should be down significantly driven by weak rail capex and weak shippable order growth in 2015. Even as of 1Q16, orders started weak with “zero” orders in the quarter. Meanwhile, CAT made a conscious decision to sit out early Tier 4 buys, and returns with its locomotive in 2H16, an incremental headwind. Our analysis of rail capex trends and backlog suggests a ~25% decline in shipments this year and a further decline in 2017, which is a TBD as capex gets revised at some of the US rails. We start by looking at overall US rail capex trends before delving into the backlog analysis.

“We’ve got somewhere around 600 locomotives that are stored. So I can take a capital holiday well 2018, 2019 before we go back in the market on locomotives is what we expect” – President/COO, Canadian Pacific Railway on the 1Q16 earnings call

Figure 165: GE Locomotive Deliveries vs North America Rails Capex/Sales



Source: GE Locomotive Deliveries vs North America Rails Capex/Sales

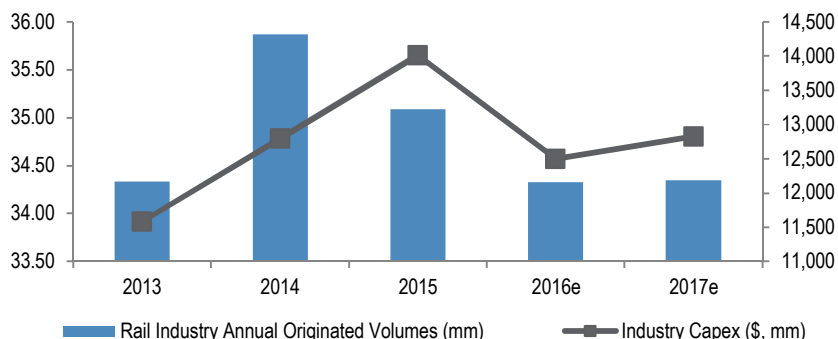
Looking at traffic vs capex trends, the industry likely overspent in 2015 and should be in a period of digestion for the next couple years

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 166: Rail Industry Annual Originated Volumes vs Industry Capex



Source: Bloomberg, Company reports and J.P. Morgan estimates.

We provide a quick summary of our bottom up revenue assumptions in the table below and then dive into backlog dynamics to gauge Loco equipment growth over the next couple years along with a brief summary on other sub-segments.

Table 117: Transportation sub-segment Revenue Growth Dynamics

	2015 Revs (JPMe)	% of sales	2016E Y/Y	2017E Y/Y	2018E Y/Y	Notes
Loco Services	2,329	38%	3%	2%	5%	Continued growth from installed base
Locos Equipment	2,684	44%	-25%	-9%	2%	Analysis above suggest down ~25% in 2016, and down further in 2017
Mining	350	6%	-10%	0%	0%	Weak capex survey forecasts
Marine, Stationary & Drilling	766	13%	-15%	5%	10%	Exposure to Oil & Gas markets
Organic Growth			-12%	-2%	4%	

Source: Company reports

We provide our backlog/shipment analysis below by first starting with the expected order profile over the next few years. We believe the order profile for GE and the industry is expected to be lumpy overall driven by the large Tier 4 orders in 3Q15 which we believe will take a couple of years to normalize. To start, we look back at 2012/2013 and see that the average GE legacy locomotive unit orders are ~650 on an annual basis and assuming ~2/3rd market share for GE (we believe this is a reasonable number for the US business, though acknowledge some shipments are non-US), this would imply an overall industry number in ~950 range.

Table 118: Normalize annual market order size

GE 2012 + 2013 + 1H14 Legacy	1,605
Average per year	642
GE market share	67%
Market size (Normalized)	963

Source: Company reports and J.P. Morgan estimates.

Assuming the overall market demand size is similar for Tier 4 with ~100% market share for GE, we see that the normalized industry orders per year is ~950 with implied 2H14 + 2015 + 2016 orders of ~2200 (GE started ordering in 2H14) and GE has already received ~1750 orders and would imply 2016 orders of ~400.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 119: 2015/2016 Implied GE orders

Market size (Normalized)	963
GE share in Tier 4	100%
Normalized industry orders per year (Tier 4)	963
Implied industry Orders 2H14 + 2015 + 2016	2166
GE Tier 4 Orders 2H14 + 2015	1761
2016 Implied	405

Source: Company reports and J.P. Morgan estimates.

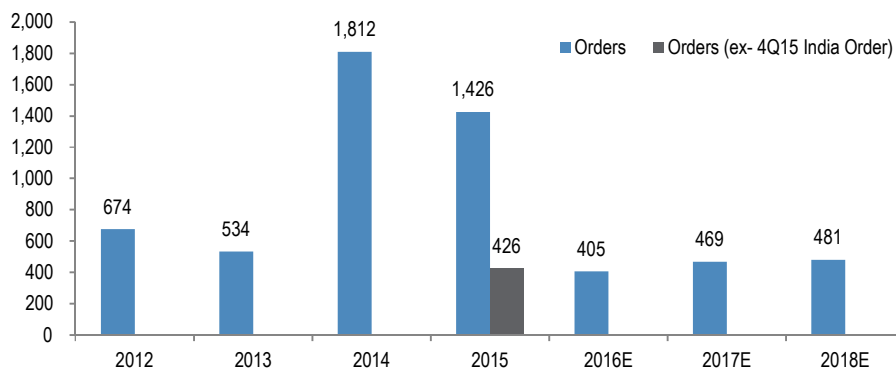
Moving into 2017, we assume the market bounces back but given the market backdrop is still well below normalized order rates. Also, CAT is expected to have its product ready and take some share back from GE, but not all. We assume ~75% share initially which likely moves lower gradually (this is a TBD). This would imply ~450-500 orders in 2017/2018, a pickup from 2016 levels.

Table 120: 2017/2018 Implied Orders

2017 Industry Demand Est.	722	
GE share	65%	Caterpillar starts shipping
GE orders 2017 Implied	469	
GE orders 2018 Implied	481	2.5% growth

Source: Company reports and J.P. Morgan estimates.

Figure 167: GE Loco Orders Trajectory



Source: J.P. Morgan estimates, Company data.

Next, we tie this into shipments. There are two assumptions underpinning our forecasts here. Firstly, we assume ~75% of orders in a given year are book and ship and secondly, GE manages to ship ~2/3rd of its prior year backlog in the forward year. Net-net we see ~25% declines in 2016 and further ~10% declines in 2017.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 121: 2015 Loco Shipments

Total Tier 4 Locomotive Orders	1600
Tier 4 Shipments So far	756
Tier 4 Backlog (similar to overall GE locos)	844
4Q orders (JPMe, including 1000 India order)	1,113
4Q15 shipments (JPMe)	320
2015 Shipments	985
2015 shipments y/y	24%

Source: Company reports and J.P. Morgan estimates.

Table 122: 2016 Loco Shipments

2015 Ending Backlog	1,637	% off backlog
2015 Ending Backlog ex-India order	637	
2016 Shipments from 2015 backlog	425	67%
2016 Loco Orders	405	% book and ship
2016 Orders converted to 2016 deliveries	340	75%
2016 shipments implied	729	
2016 shipments y/y	-27%	

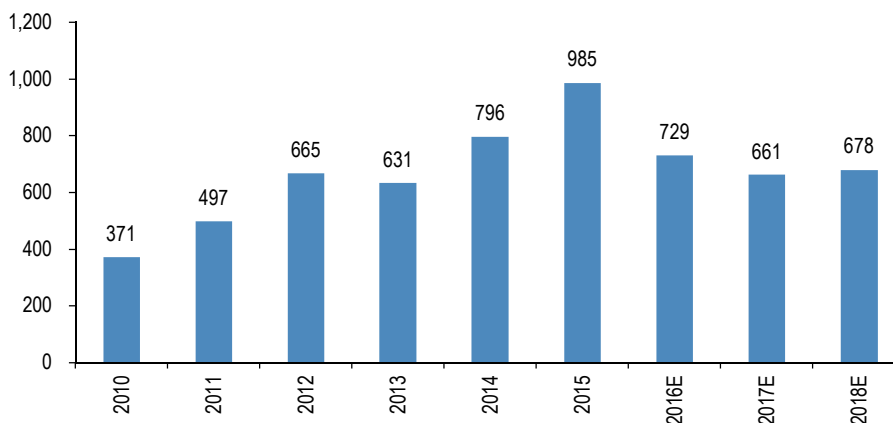
Source: Company reports and J.P. Morgan estimates.

Table 123: 2017 Loco Shipments

2016 Ending Backlog	1314	% off backlog
2016 Ending backlog ex-India order	314	
2017 Shipments from 2016 backlog	309	67% + 100 shipments from 4Q15 India order
2017 Orders	469	% book and ship
2017 orders converted to 2017 shipments	352	75%
2017 shipments implied	661	
2017 shipments y/y	-9%	

Source: Company reports and J.P. Morgan estimates.

Figure 168: GE Loco Deliveries



Source: Company reports and J.P. Morgan estimates.

We also highlight potential for a more focused Chinese competition in this business post the recent merger of CSR and China CNR. While CRRC (the new combined company) are heavily involved in passenger coaches where they compete more with the likes of Bombardier and Siemens, they do have a presence in commercial locos and we see this is a increased competition for GE, given typically aggressive pricing historically from Chinese companies (according to press reports last year CNR won a major rail contract in North America, a \$567mm deal for Boston subway trains which was underpriced by ~50% compared to Bombardier's bid). CSR has in the past received joint contracts with GE - in March last year, South African customer Transnet had entered into a \$4.26B agreement to buy 599 electric and 465 diesel locomotives from GE, CNR, CSR and Bombardier.

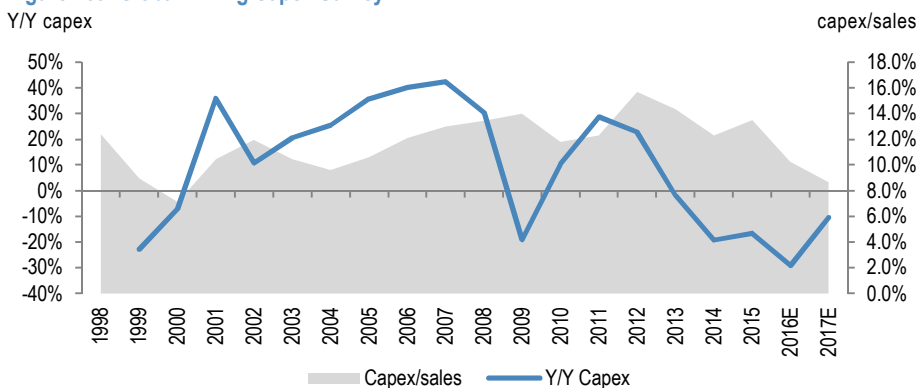
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Mining - Moving to mining, which is ~7% of annual revenue within the Transportation segment vs ~15% 2 years back, trends here remain sluggish though at highly depressed levels with further y/y declines likely moderating. Miners continue to cut capex and a look at our capex survey continues to show declines through 2017.

Figure 169: Global Mining Capex Survey



Source: Company reports and J.P. Morgan estimates.

Another business within the Transportation segment, called 'Marine, Stationary & Drilling', has not generally been an area of debate given its size historically, but is now a bigger business than mining at ~13% of segment sales. Products here are motors for land and offshore drilling rigs, marine diesel engines and stationary power diesel engines, all of which we believe are in the midst of industrial and Oil & Gas activity headwinds. We see this sub-segment having another down year in 2016 (after down ~20% in 2015), before potentially stabilizing in 2017.

Profit Dynamics

On profits, we see the decline in revenues flowing through at normal decrementals of ~35% which get offset by ~\$100mm in productivity driven savings.

Table 124: Transportation 2016 Segment Bridge

	Revenue	Profits	Inc/Dec
Start (2015)	5,933	1,273	
Volume	(712)	(247)	35%
Acquisitions/Div (Signaling)	(258)	(39)	15%
Forex	0	0	
Value gap		0	
Productivity		100	
End (2016)	4,963	1,087	

Source: Company reports and J.P. Morgan estimates.

Table 125: Transportation 2017 Segment Bridge

	Revenue	Profits	Inc/Dec
Start (2016)	4,963	1,087	
Volume	(99)	(17)	17%
Acquisitions/Div (Signaling)	0	0	15%
Forex	0	0	
Value gap		0	
Productivity			
End (2017)	4,864	1,070	

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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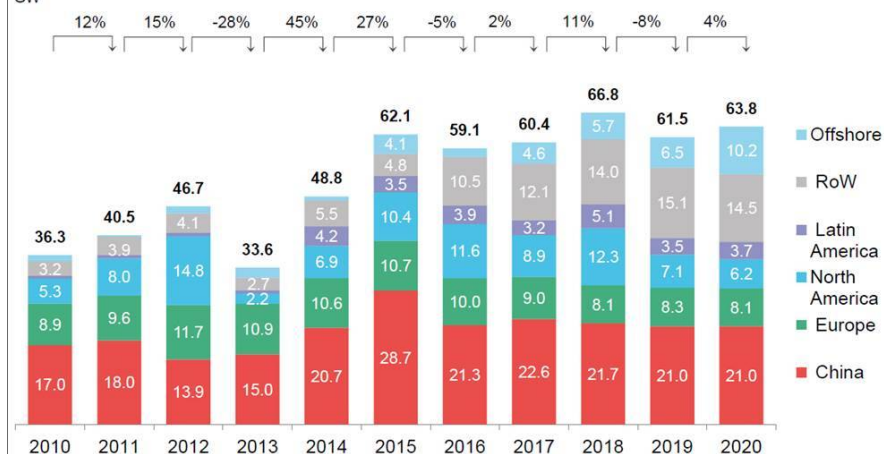
Renewables – New Product Cycle Helps Revenue Growth

From a macro perspective, financing of renewables has been solid with 2015 likely the second consecutive year in which investment in wind and solar exceeded new investment in conventional power plants. Wind turbine shipments grew ~30% in 2015 to ~62GW, and 2016 is expected to be somewhat of a challenging year, driven by Europe's move to auction-based pricing and reduced FiTs (feed-in-tariff)/increased curtailments in China. Standing forecasts from Bloomberg New Energy finance (BNEF) calls for a 2016 to be down ~5%, but we could see some upside give the extension of the US PTC before eventual roll off by 2019.

Figure 170: Wind installations should remain elevated at ~60GW in 2016

Gigawatts

Figure 2: Annual wind installations by regions, including offshore wind, 2010–20e (GW)
GW



Source: Bloomberg New Energy Finance. Used with permission

But US PTC ruling amendment issued recently provides some upside as per BNEF. These amendments include 1) projects will have at least two more years of construction time, 2) projects will be able to access the full value of the credit for longer, despite the fact that legislation enacted last December adds a phase-out schedule to the PTC, and 3) developers will be able to disaggregate projects down to the turbine level, vastly reducing the impacts of project delays on PTC eligibility. BNEF expects upside to new turbines ordered by the end of 2016 with a new peak in build likely in 2020 vs 2018 prior.

Yieldco funding an important dynamic: While there has been a lot of focus on the Wind PTC extension by the US government, we believe YieldCo funding plays an equally important role in the development of the Wind market. On this front, given the sharp decline in stock prices of these companies (essentially structured as MLPs or REITs), the higher cost of capital likely mutes growth that was associated with aggressive investment in wind assets in the recent past.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

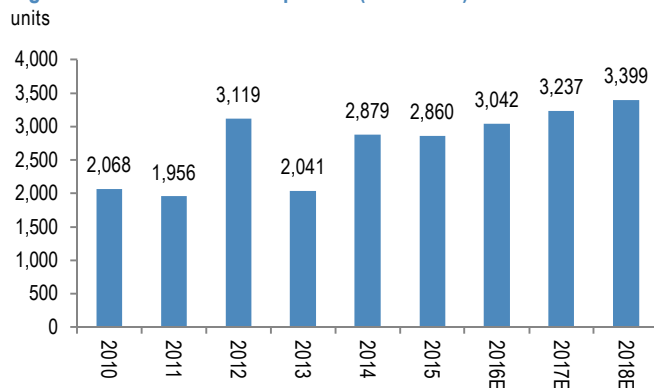
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GE Revenue and Profit dynamics

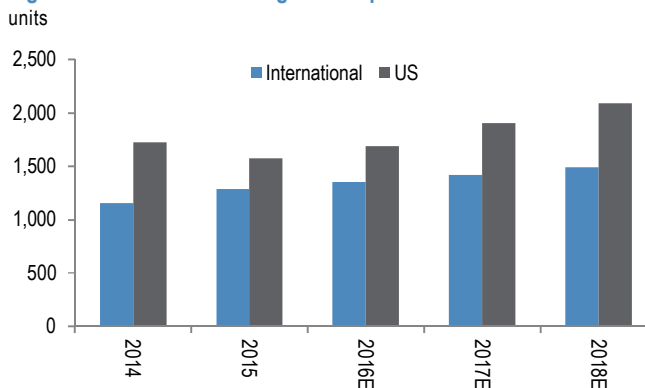
For GE specifically, from a unit shipment perspective, shipments are expected to be ~3050 for the year, up from 2015 levels with ~100 from ALO and ~2950 from GE. However, despite flattish shipments overall, core revenues are expected to be up driven by a mix of higher MW shipments (2.0x and 3.0x) for an overall top line growth of mid-teens organically. Also notable is that orders for the new 2.0x and 3.0x turbines contributed to 70% of the mix in 1Q. Looking regionally, the mix of orders and shipments has gradually moved towards higher international, and we would not be surprised to see this continuing into 2016-2018. For the US, there are numerous factors impacting shipments which include state by state mandates between mix of fossil and renewable, which is generally beneficial, but a lot of projects funded through yield cos which gets tougher in a rising rate environment. In addition, the recent extension of the PTC through 2019 is also a key factor giving utilities certainty regarding a gradual phase out of the program rather than a step change. Finally, we think with the new upgrades, there is large replacement opportunity for GE to replace old inefficient turbines, something even competitor Siemens alluded to on their F2Q conference call recently.

Figure 171: Wind Turbine Shipments (Ex-Alstom)



Source: Company Reports, J.P. Morgan Estimates

Figure 172: Wind Turbine Regional Shipments



Source: Company Reports, J.P. Morgan Estimates

Looking at profits, after a solid start to 1Q driven by volume leverage, we expect some moderation for the rest of the year, as the new product launch impacts mix somewhat, coupled with the integration of lower margin Alstom renewables revenues.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 126: Renewables Segment Margin Bridge

	2014	2015	2016E	2017E	2018E
Sales Start	4,824	6,399	6,273	8,843	9,785
Core	1,675	224	939	941	386
Price	200	100	0		
Volume	1,475	124	939	941	386
Acquisitions		100	1,913		
Forex	(100)	(550)	(282)	0	0
Other		100	0	0	0
Sales End	6,399	6,273	8,843	9,785	10,171
OP Start	485	694	431	707	881
Core	(31)	87	361	73	87
Price	200	100	0	0	0
Volume	(231)	(14)	361	73	87
Mix + Productivity	240	(200)	(200)	100	100
Inflation/Deflation		(100)		0	0
Acquisitions	0	(100)	144	0	0
Forex		(50)	(28)		
Other (launch costs)		100			
OP End	694	431	707	881	1,068
Margin	10.8%	6.9%	8.0%	9.0%	10.5%

Source: Company Reports, J.P. Morgan Estimates.

Looking at peer margins in the space, we think there is some entitlement for GE's margins to grind higher over the long-term, but the market is structurally tough in our view. Siemens on their recent F2Q conference call highlighted that barriers to entry are low on the technology/manufacturing side in Wind.

Table 127: Renewables Segment Margin vs Peers

Vestas	11%
Gamesa	9%
Goldwind	11%
Average	10%
GE (2015)	7%

Source: Company reports and J.P. Morgan estimates.

Energy Connection – Focus on Cost Execution Near-Term

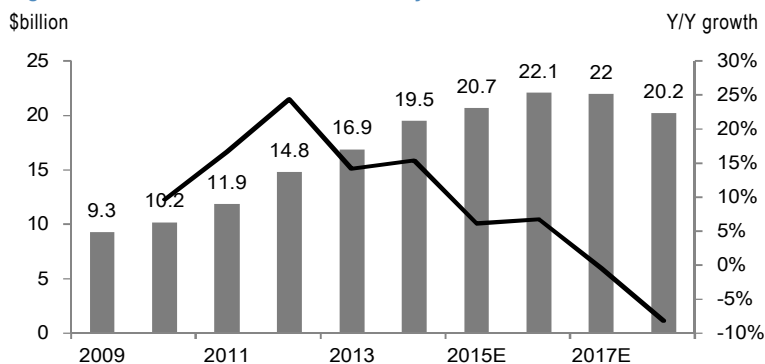
This segment was renamed from Energy Management to Energy Connection recently and now consists of GE's legacy Power Conversion Business, Industrial Solutions along with GE + Alstom's combined Grid Solutions business which includes GE's Digital Energy piece as well. Overall we see core growth impacted near term by oil & gas related headwinds in the Power conversion business, but see long-term growth opportunities driven by an eventual uptick in grid spending and need for more distributed generation capabilities worldwide.

Macro backdrop mixed in the near-term

Looking at the macro backdrop, Transmission spending has been better than generation spending in recent years due to the transmission intensity of wind. Investments into the transmission network have been the main priority for utilities in recent years. Growth in wind power has been the main driver and investments here have come at the expense of distribution grid spending. As wind growth slows or even declines, growth will likely slow. According to the Edison Electric institute, renewables integration into the power grid accounts for about 70% of all new transmission investments in the US. Continued capacity additions should further put pressure on the grid in terms of demand management and support distribution grid investments into automation and control.

The US transmission market has more than doubled since 2010 and is up 4x since the low levels of investment over 2000-2005. This has been driven by required integration of renewables and an aging grid. We expect the market to grow in 2016 but it could slow thereafter given the likely peak in wind turbine investments. J.P. Morgan Engineering and Construction Analyst, Jeff Volshteyn, notes that the EPC companies, including Quanta Services and MasTec, are seeing a lot of permitting delays notwithstanding strong demand for transmission upgrades heading into 2016. There are generally multiple stakeholders in the permitting process and a NIMBY ("Not In MY Back Yard") attitude prevails. He also notes that there are other uncertainties in the space, relating to implementation of the Clean Power Plant regulations and FERC order 1000.

Figure 173: US: Transmission investment by investor owned utilities



Source: Edison Electric Institute October 2015

European utilities have invested into the connection of renewables as well, driven by offshore wind connections. These connections are now mostly in place with the near term focus on building the related wind farm and therefore this market could likely

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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decline. However, this should be offset by a still good market for grid connections (inter country like in Germany or connecting grids across Europe) and result in overall flattish. In China, State Grid of China ramped up investments in 2015, slowing to 10% growth in 2016, according to the government plan.

Revenue and Profit dynamics

Overall, for GE, we expect steady execution on productivity initiatives in Energy Connection which should help drive core margin improvement in the segment. However, post the JV with Alstom in the Digital Energy business, we see margins declining in the near-term as 50% of the high margin Digital Energy business gets stripped out of GE's earnings. As a result 2016 margins are likely going to be down y/y, followed by an uptick in 2017 and beyond driven by synergy benefits at the acquired Alstom businesses. As with Alstom Power, GE is expected to report overall revenues including the JV portion but profits are expected to exclude the JV income (this deflates the headline margin number).

Table 128: Energy Connection Model

	2014	2015	2016E	2017E	2018E
Energy Connection Revenue	7,319	7,600	10,084	10,286	10,646
Energy Connection Profits	246	270	303	566	745
Margin	3.4%	3.6%	3.0%	5.5%	7.0%
Energy Connection Revenue (Ex- Alstom)	7,319	8,552	5,084	5,286	5,646
Energy Connection Profits (Ex- Alstom)	246	265	153	346	445
Margin ex-Alstom	3.4%	3.1%	3.0%	6.5%	7.9%

Source: Company reports and J.P. Morgan estimates.

Lighting

Growth is expected to be driven by US construction market (US is ~60% of revenues and infrastructure is ~75% of overall Lighting sales) coupled with a shift to energy efficient lighting via LED's which is expected to be offset to some extent by a faster anticipated decline in the legacy lighting market. Revenue growth in Lighting has been mixed in recent quarters after strong growth through 3Q15 YTD. With comps getting tougher through the year, we see potential for flattish growth in 2H for the standalone Lighting segment

Table 129: GE Appliance & Lighting Sub-segment Historical Growth

	4Q14	1Q15	2Q15	3Q15	4Q15	1Q16
Revenues	1,941	2,235	2,293	2,293	2,282	1,996
Appliances	8%	7%	10%	10%	0%	8%
Lighting	-3%	2%	5%	5%	-5%	-7%
<i>Traditional Lighting</i>	<i>-18%</i>	<i>-17%</i>	<i>-15%</i>	<i>-15%</i>	<i>-17%</i>	<i>-23%</i>
<i>LED</i>	<i>76%</i>	<i>77%</i>	<i>65%</i>	<i>65%</i>	<i>28%</i>	<i>19%</i>
LED % of revs	30%	36%	39%	39%	37%	39%

Source: Company reports and J.P. Morgan estimates.

Table 130: Lighting Model (assuming mid-2016 divestiture of Appliance)

	2014	2015	2016E	2017E	2018E
Appliance & Lighting Revenue	8,404	8,751	5,764	2,436	2,510
Appliance & Lighting Profit	431	674	389	166	181
Margin	5.1%	7.7%	6.8%	6.8%	7.2%

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Alstom Deep Dive: Assume Execution on Synergies, But Guidance Looks Full

Focus here over the medium-term is expected to be on execution on synergy targets laid out by management. GE targets ~\$3B in synergies by 2020 with ~\$1.1B in 2016 and we bank these benefits in our estimates, but view 22% of sales as abnormally high (HON targets 6-8%, DHR usually 10%). while see some obvious merits from the deal from a revenue synergy perspective as well, we struggle to identify with the structural benefits from the deal over the long-term given the new assets being acquired here are highly competitive in nature to start and structurally lower margin to start with. In the end, these types of cuts may just mean lost business and revenues may not be there for commensurate long term support. In addition, the delay in closure of the deal has likely lead to share losses in certain markets (backlog is down ~10% y/y and down ~25% y/y since FY13) in a world that is likely to move to distributed generation over the longer-term, hurting the centralized generation specific offering here.. We walk through some of the puts and takes below and summarize our ultimate accretion model through 2020, which is largely in-line with GE's targets.

Difference in Deal Metrics vs Initial Announcement

We start the discussion by looking at the final deal metrics vs what was initially communicated in April '1 and then in July '14 post the JV adjustments. There are a number of key changes which include 1) Deal price – helped significantly by the stronger USD (discussed later in the section) and 2) Income from operations – down ~\$1B from initial, 3) Synergy targets – up ~\$1.8B or ~150% from initial targets, 4) Costs to acquire synergies – up ~\$1B or ~100% which is largely driven by the higher synergies and 5) EPS accretion in year 1 - down from \$0.06-0.09 to ~\$0.05 - driven largely by weaker lower operational performance and offset by tax benefit (discussed later as well in the accretion model).

Table 131: Alstom Deal Metrics: Initial vs Final

	April '14	July '14 (After Divestitures)	May '15 (After Divestitures)	Sept '15 (After Divestitures)	Current (After Divestitures)
High Level Metrics					
'16 EPS accretion	0.08-0.10	0.06-0.09	0.06-0.09	0.05-0.08	0.05
'18 EPS accretion			0.15-0.20	0.15-0.20	0.15-0.20
IRR	high teens	high teens	'strong'		15%+
EV	13,500	10,100		9,500	10,300
EBITDA (FY end, Mar)	1,709	1,354		600	600
EBITDA (LTM Sep'15)					11
EV/EBITDA FY'15	7.9	7.5		15.8	17.2
EV/EBITDA FY'15 PF synergies	4.6	4.0		2.6	2.9

Source: Company reports and J.P. Morgan estimates.

Long –term targets

This includes hitting ~20% in margins for the Power segment, ~5-10% for Renewables and ~10%+ Grid. The combines business currently has negative profitability as of 2015.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 132: Long-term acquired Alstom businesses targets

	Margin Target	Returns Target	Profit Drivers
Power	20%	20%	Technical Depth, Services & analytics, Supply chain strength, Global reach
Renewables	5-10%	30%	Integration/product cost, International growth, Build services, Manage projects
Grid	10%+	15%+	Lower product cost, Project & supply chain execution, Commercial excellence

Source: Company reports and J.P. Morgan estimates.

JVs

Upon closure of the deal, GE and Alstom have also formed the following JVs: Grid, GE Digital Energy, Renewables and Global Nuclear & French Steam. Alstom has 50% ownership in Grid and Renewables JVs, with GE controlling ~80% of the economics in Global Nuclear and French Steam.

JV#1: Grid JV: Alstom has a 50% stake and accounts for 50% of the earnings (equity method) of former Alstom Grid business while GE will contribute GE Digital Energy to the JV. We estimate GE Digital Energy to have ~\$1.5B of sales with a 7% operating margin. GE Digital Energy is a mid sized player in the High and Medium Voltage market (transformers, switch gear, capacitors, circuit breakers etc). It also has an offering in smart meters, substation automation and grid management. In addition, it provides AC grid project services and substation EPC. We would expect to see some cost synergies in North America, where the majority of GE's activities are, though GE disclosed in its initial deal presentation that there would be \$200 mm in synergies here. In May 2012, GE announced a JV with XD of China (GE owns 41%) and acquired a 15% stake in XD for \$535mn and we have assumed that GE retains the stake. On the impact on this partnership from the Alstom deal, GE has mentioned in the past that they see the partnership as complementary, though commentary from the recent T&D convention noted the value of the JV is lessened by the ALO transaction.

Renewables JV: This includes about $\frac{3}{4}$ of sales exposed to Hydro Power and the offshore wind start up (no sales, development costs). GE keeps 100% of the onshore wind business (~\$400m of sales, mid single digit margins on our estimates). GE is not present in Hydro (had sold the business to Andritz in 2007) and we do not expect any material cost synergies. This business had about \$1.8B revenues in 2014, according to Alstom.

Nuclear & French Steam JV: Alstom and GE will have shared governance in a 50/50 alliance in global nuclear and French Steam with GE controlling ~80% of the economics. In addition, the French State will hold a preferred share giving it a veto and other governance rights over issues relating to security and nuclear plant technology in France. Based on company comments we estimate sales of ~\$1.5B. Profitability has not been disclosed but we believe it is in the mid single digits. The business includes the large steam turbine (Arabelle) used in nuclear power plants and steam related (OE and service) activities in France. Most of the large steam turbines used in France are in nuclear power plants.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Put Options: Alstom has said that these JV agreements include the usual shareholder agreements with standard governance and liquidity rights. The key issue here is that the JV structure was designed to appease concerns of the French Government on its national interests and therefore we believe Alstom will not be allowed to exercise them, at least under this administration (next elections April or May 2017). The French Government has the right to block disposals based on its amended decree from May 15 that requires approval for sales abroad of stakes or companies active in Energy and Transport, among others. We estimate GE will have to pay ~\$2.5-3B after year 3 to exercise this option.

Table 133: ALO Power Sales

\$million

Current FY15 Base (JPMe)	
Thermal	10,000
Renewables	2,800
Grid	4,700
Total	17,500

Source: Company reports and J.P. Morgan estimates.

Table 134: ALO JVs Sales

\$million

JPMe	ALO	GE DE	Combined	ALO Share
Grid	4,700	1,000	5,700	2,850
Renewables	2,800			1,100
Nuke/Steam (France)	1,800			300
Total				4,250

Source: J.P. Morgan Estimates

Table 135: Sales Retained by GE

\$million

Current FY15 Base (JPMe)	
Thermal	9,700
Renewables	1,700
Grid	2,350
Total	13,750

Source: Company reports and J.P. Morgan estimates.

Alstom Energy financial performance prior to acquisition close

The delay in closing has had a clear negative impact on Alstom's financials, with profits down ~\$1B since acquisitions. The business has indeed shown negative profitability in the last 12 months ending Sept'15. This is down from ~6% margins in FY13 and FY14 (ending Mar) and down from ~6% in LTM ending Sept-14. Management current expects "zero" profits from underlying operations (ex-one time costs/restructuring) in the last 2 months of the quarter ending Dec'15. Segment profits were negative ~\$150mm in the last 2months of 2015 post the acquisition and negative ~\$20mm in 1Q16 (ending March'16).

Table 136: Alstom Energy Sales and Margins since Acquisition Announcement

Alstom Energy (\$mm)	FY13 (Mar-13)	FY14 (Mar-14)	1H15 (Sept-14)	2H15 (Mar-15)	FY15 (Mar-15)	1H16 (Sept-15)	LTM (Sept-15)
Sales	19106	19287	8532	8342	16929	7345	15687
EBIT (inc Amort)	1174	1190	487	(146)	302	(243)	(389)
Margin	6.1%	6.2%	5.7%	-1.8%	1.8%	-3.3%	-2.5%

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Ansaldo dynamics

The Alstom assets sold to Ansaldo, while small in overall size (deal size is 0.05% of GE's market cap), has been divested at ~2x EV/EBITDA multiple vs the initial Alstom deal EBITDA of ~8x and standing trailing multiple of ~17x. Below is a summary of assets sold to Ansaldo:

- *All of Alstom's heavy duty gas turbine intellectual property rights for the GT26 and GT36 turbines including the R&D pipeline. The GT26/36 is Alstom's main gas turbine product focused on the 50Hertz market (most of the market outside North America).*
- *400 employees in Baden, Switzerland working in the development of gas turbine technology*
- *Alstom's Power Systems Manufacturing (PSM) business, the group's service company focused on the aftermarket opportunity of other OEMs (mainly focused on GE, Mitsubishi and Siemens F frame technology). Ansaldo also acquires the IP of PSM relating to Siemens and Mitsubishi turbines.*
- *Alstom's IP relating to the gas turbine business sold to GE not related to the GT26/GT36.*

Note, GE retains the licenses to service competitor equipment and will have ability to manufacture parts in the future. We regard the outcome of the EU/DoJ antitrust review as a negative for GE. The absorption of the Alstom Power gas turbine business into GE would have consolidated a competitive and oversupplied market. The EU/DoJ ruling not only preserves competition but in our view in the medium term even increases it. Ansaldo/Shanghai Electric's (which is acquiring technology) position is strengthened getting the Alstom G26/G36 technology and Siemens/Mitsubishi F frame technology through the PSM acquisition. Ansaldo Energia believes that the acquired technology will allow it to grow its revenues 2x over the next five years. As of 2014, PSM's US revenues from aftermarket parts and service for the GE 7FA gas turbines were ~\$90mm (~\$226mm worldwide) compared to ~\$730mm for GE.

Revenue synergy opportunities solid with Alstom combination

From a strategic standpoint, we believe this deal opens up new revenue streams for both GE and Alstom, with a more wholesome power plant solution offering compared to competitors driven by largely complementary products lines and technology.

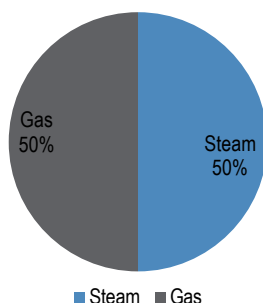
Power: Within the obvious overall installed based service opportunities which expands by >50% with the acquisition (GE has ~1000 GW installed base of which 50% is GT + Alstom 500 GW of which ~25% is GTs, also GE's installed base of units expands from 15,000 to 24,000 with Alstom), we see maximum opportunity from steam upgrades and wholesome new product offerings. Most power plants worldwide still run on base load capacity which has less efficiency and upgrading them to combine cycle plants could be a big area of opportunity – this was an area of opportunity for GE even before the Alstom acquisition given ~70% of new gas turbine purchases will be part of a combined cycle gas power plant, but GE can now approach new and existing customers, particularly existing ALO customers, with a more wholesome solution and offering.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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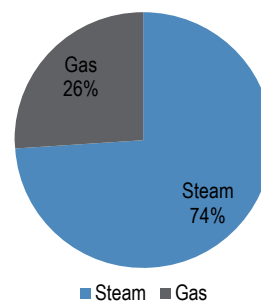
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Figure 174: GE Services Installed Base



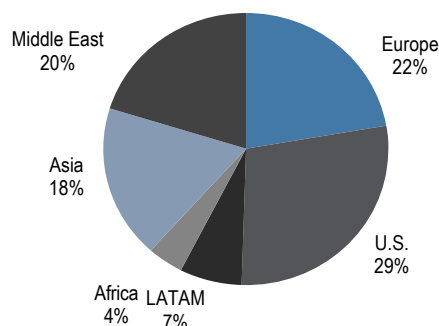
Source: Company Reports

Figure 175: Alstom Services Installed Base



Source: Company Reports

Figure 176: Global Presence Regional



Source: Company reports and J.P. Morgan estimates.

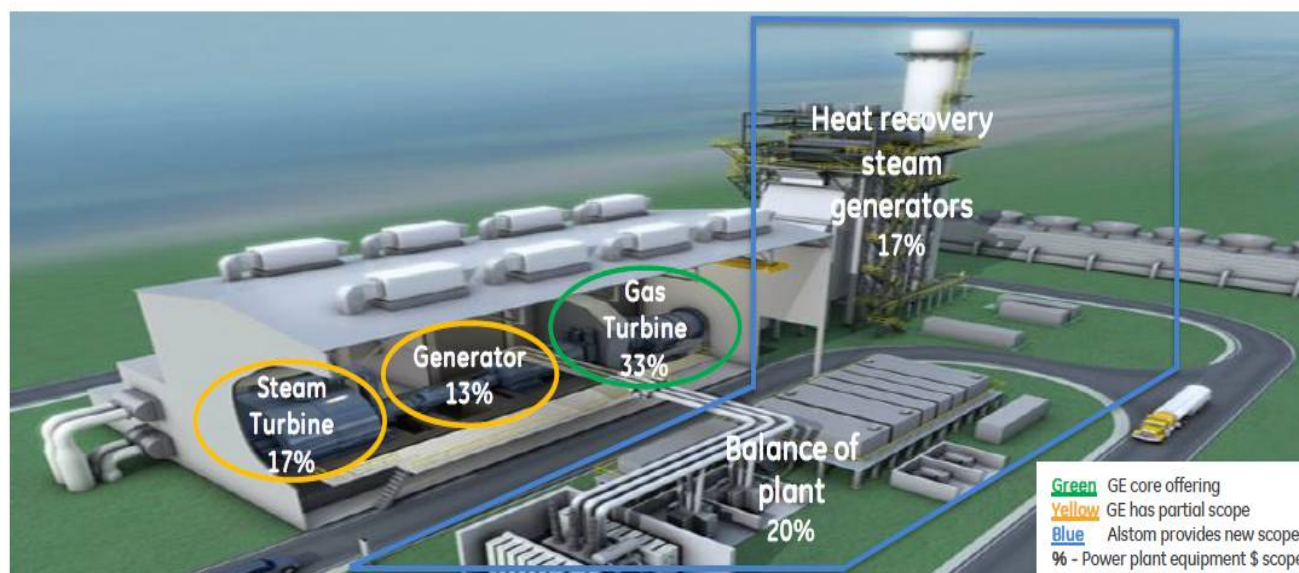
GE used to be a major player in steam turbines in the past with 30-40 year old installed bases of turbines but their service business is currently inadequate from an in-house solutions perspective and ALO brings a significant amount of knowledge and expertise here given its leadership in the current steam technology space. In addition, ALO's complementary offering such as Balance of Plants, Gas Turbine Generators and HRSGs enable GE to now provide a wholesome combined cycle plant solution. From a vertical integration standpoint, while HRSGs (30+ opportunities/year as per GE) and Gas Turbine Generators (40+ opportunities/year) are strong additions to the GE portfolio GE also brings additional scope to Alstom's existing portfolio – examples are boiler feed pumps & valves and low & medium voltage equipment bringing the total vertical integration opportunity to ~\$1B/year by 2018 as per GE. This is something we don't argue with as we see obvious potential here from the complementary product sets.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 177: GE-Alstom Combination Opportunity in a Combined Cycle Gas Power Plant



Source: GE Investor Presentation. Used with permission.

Table 137: Major Customer Wins for GE + Alstom Combination since Deal Announcement

Order Quarter	3Q14	3Q15	3Q15	4Q15	4Q15	1Q16	1Q16
Customer	Exelon	PSEG	QA Thermal Power	Bhikki, Pakistan	Balloki, Pakistan	SEPCOIII Electric Power	Tunisian Electricity and Gas Company
GE Product	4 7HA GTs, 2 STs	1 7HA GT, 1 ST	2 9HA GTs	2 9HA GTs	2 9HA GTs	2 9HA GTs	2 9E.03 GTs
Alstom Product	4 HRSGs	1 HRSG	1 ST	1 ST	1 ST	1 ST, 2HRSGs	eBOP

Source: Company reports and J.P. Morgan estimates.

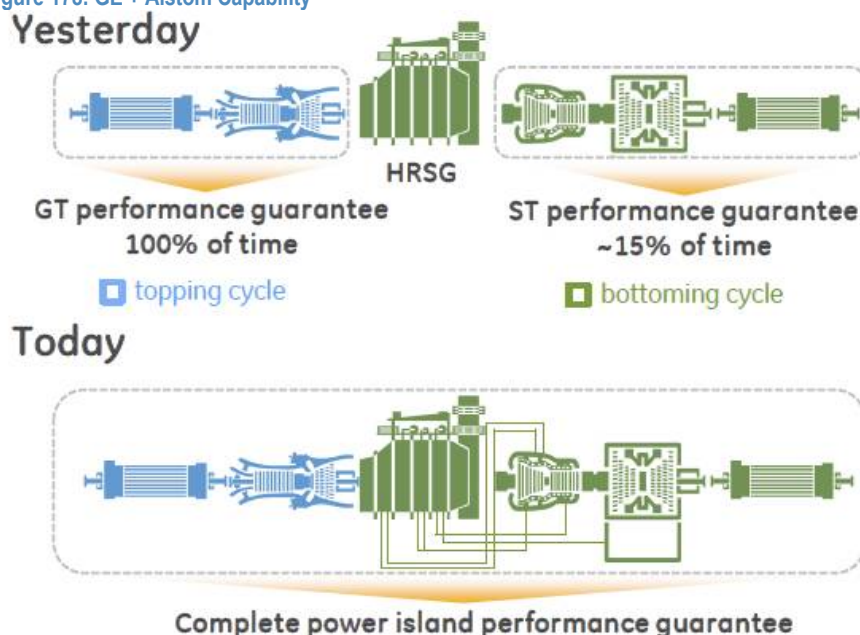
GE has noted that a bottoming cycle steam tail was combined with their gas turbine offering only ~15% of the times and Alstom takes this to ~100%, allowing for better customer performance with no incremental fuel or maintenance expense. GE highlighted a recent order win where the customer was able generated a ~\$35mm NPV over the life of the plant and GE's current pipeline for such opportunities has already crossed >\$1B within 2 months of closing.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 178: GE + Alstom Capability



Source: Company reports. Used with permission

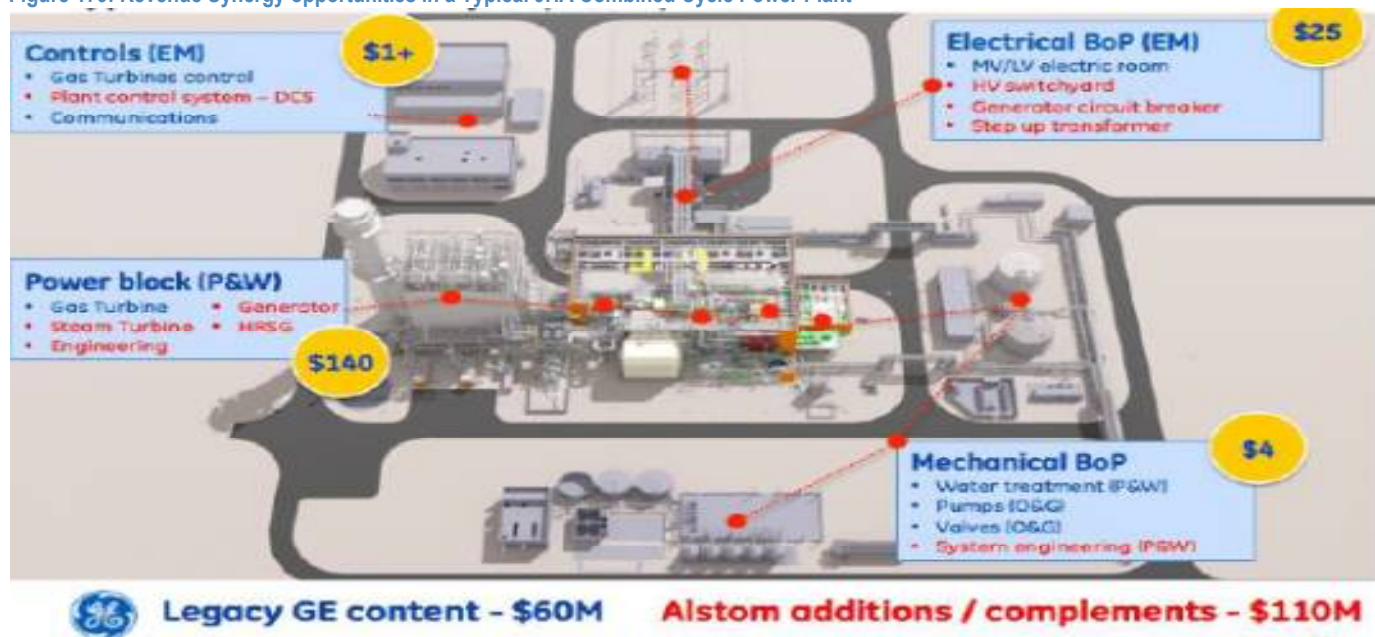
In addition, from a technical collaboration standpoint, there is also a significant opportunity for GE to implement its service 2.0 /CSA model along with software and analytics across Alstom's installed base. Even on the gas technology side, while GE is the clear global leader in the space from both a revenue scale and technology perspective, ALO also brings differentiated technology on the combustion side - a unique design feature of Alstom's turbines that has been used for sequential combustion technology (two stage turbine in which the exhaust gases from the first turbine are fed into the combustor of the second). This results in low emissions and improved efficiency at partial load while the CO compliant turn down of the engine is worse compared to the single combustor engines of the other players. Overall GE sees ~\$500mm in revenue synergies by 2020 from technology collaboration with ~\$200mm coming from upgrades (AGPs, MXL2 – Alstom's AGP equivalent), ~\$100mm from steam tail capture (using Alstom's boiler and HRSG capabilities for upgrading GE existing installed base), ~\$100mm from software solutions (raising Alstom digital monitoring capability from 90 units to ~600) and ~\$100mm from winning from other OEMs. We believe there is a strong upgrade opportunity here particularly on the 25 yr + old GE steam turbine installed base plants in order to gain few points of efficiency (not as much coal required for same amount of output). On the products front, there is also incremental opportunity on the Electrical BoP (eBoP) front, where Alstom helps increase the content significantly with its complementary offering.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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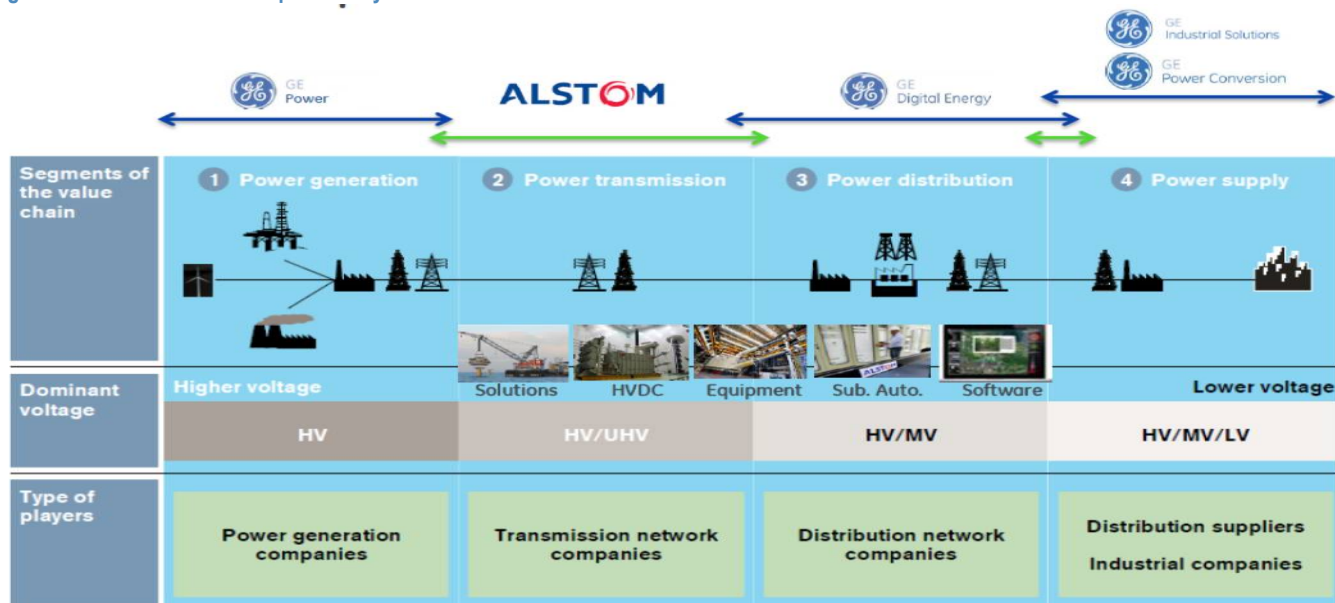
Figure 179: Revenue Synergy opportunities in a Typical 9HA Combined Cycle Power Plant



Source: Company Reports. Used with Permission

Grid: We believe Alstom's Grid business is highly complementary to GE's product line as well as regional presence. Historically, GE Digital Energy has had a predominant presence in the North American (70% in US) low and medium voltage secondary T&D market and Alstom Grid has a large presence in the primary market with a significant global presence (90% outside US).

Figure 180: Alstom Grid a Complementary Portfolio Fit with GE



Source: Company reports. Used with permission

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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We also had a chance to get a hands-on update of the latest combined offerings here at the IEEE convention in Dallas. The GE booth featured significant product from ALO on both the hardware and software side. Still, with different brands for different products, the integration is obviously in its early stages, and therefore less rationalized than clearly integrated offerings of ABB, Siemens and Schneider. This said, the ALO business clearly provides a shot in the arm for a T&D business at GE which had been relatively weak and subscale at ~\$1.5 B in revenue. The story around advanced demand management systems/smart grid is a prime example, where last show we saw examples of GEs emerging "Grid IQ Insight" product, their approach to a broad based grid management software. We had been impressed with ALOs offering at the last show, and sure enough the company has essentially re-branded the ALO offering at "Grid IQ Insight" while merging the lesser GE package into the superior one from ALO. This is the product we saw 2 years ago at the ALO booth, piloted by DUK with a grant won by from the DOE. The rep noted that GE has invested more here since the deal closed and while most of the apps on the dashboard are currently developed in house, over the next year they will allow customers to develop their own on the Predix cloud, in line with the GE Digital story. The rep stopped short of providing any revenue detail as it remains early. The company also highlighted its substation asset monitoring software/solutions as differentiated, though our trip to other booths showed this is more of a standard industry wide and not a competitive differentiator.

Are these incremental revenue opportunities high quality?

While Alstom provided substantial incremental scope in a combined cycle power plant, we note that the new assets are highly competitive in nature, more so than GE's existing assets. A key new product line is the HRSG (Heat Recovery Steam Generator) where there are numerous competitors in the market globally with margins likely in the MSD range—an indication of business quality. Management recently acquired Doosan's portfolio here for ~\$250mm.

Even on other supplementary product lines like Steam Turbines and Balance Plant, there are large existing global competitors like Siemens and MHI, along with numerous competitors in the Steam Turbine area including Siemens, Harbin, Shanghai, Dongfang, SHIN, BHEL, Nanjing and MHI. Equipment Margins in steam turbines, heat recovery, boilers etc are 5% with more limited proprietary service content. Even on the renewables side competition is intense in both hydro and wind with global players such as Siemens, Vestas, Dongfang, BHEL, Suzlon and Andritz.

Table 138: Competition Across Combined GE-Alstom Offerings

	Competition
Gas Turbine/Generator	Siemens, MHI, Alstom, Ansaldo
Steam Turbine/Generator	MHI, Siemens, Harbin, Shanghai, Dongfang, SHIN, BHEL, Nanjing, Ansaldo
Heat Recovery Steam Generator	Nooter, Vogt, CMI, MHI, Alstom, NEM, AMEC and Babcock & Wilcox
Balance of Plant	Alstom, GE, Siemens

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 139: Peer Margin Table

Company	Segment Margin
Siemens	
<i>Siemens Energy</i>	12%
Mitsubishi	
<i>MHI Power</i>	10%
Harbin	
<i>Thermal power equipment</i>	12%
<i>Hydro power equipment</i>	13%
<i>Engineering services for power</i>	8%
<i>Ancillary equipment for power</i>	23%
Shanghai Electric	7%
<i>New energy</i>	-4%
<i>High efficiency and clean energy</i>	5%
Dongfang Electric	
<i>New energy</i>	12%
<i>High efficiency and clean energy</i>	17%
BHEL-Power	12%
CMI	
<i>Engine</i>	11%
<i>Power generation</i>	6%
<i>Components</i>	13%
Babcock & Wilcox	16%

Source: Company reports/Filings

Margin Outlook: Synergy targets achievable, but full

As highlighted earlier, the acquired Alstom businesses are currently running at below break-even levels and believe the synergies GE anticipates going forward likely more than offsets this. In addition, we believe the closure of the deal provides customers more certainty and order should likely start flowing through and while sales in the near-term are likely to be impacted by the weak orders over the prior year, we believe the underlying business should likely be on its way back to prior margin levels (ex-synergies) but the magnitude of recovery would largely be dependent on as execution on synergies and also so some degree, a pick up in orders/revenue growth.

Table 140: Alstom Energy Sales and Margins since Acquisition Announcement Prior to Closing

Alstom Energy (\$mm)	FY13 (Mar-13)	FY14 (Mar-14)	1H15 (Sept-14)	2H15 (Mar-15)	FY15 (Mar-15)	1H16 (Sept-15)	LTM (Sept-15)
Sales	19106	19287	8532	8342	16929	7345	15687
EBIT (inc Amort)	1174	1190	487	(146)	302	(243)	(389)
Margin	6.1%	6.2%	5.7%	-1.8%	1.8%	-3.3%	-2.5%

Source: Company reports and J.P. Morgan estimates.

Synergy Targets Achievable: On the costs side there are visible opportunities here, particularly from a SG&A and footprint perspective. At the time of acquisition, GE cited ~\$1.2B in synergies over 5 years driven by ~\$400mm in footprint optimization, ~\$250mm from combined sourcing savings, ~\$300mm from optimizing R&D efforts and ~\$250mm from consolidating support function, primarily duplicate SG&A and public company costs. One year into these targets, and upon closing, GE raised their synergy targets with majority of the increased coming in employee/footprint related opportunities with now ~\$1.7B from SG&A and manufacturing/services.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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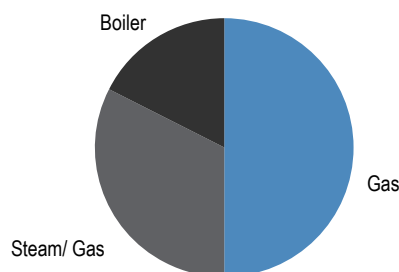
Table 141: GE - Alstom Synergy Targets

	Initial Targets	Latest Targets
Synergies Total	1200	3000
Manu/services	400	500
Sourcing	250	900
SGA	250	1,200
R&D	300	400
Employee/Footprint related Savings		1,700

Source: Company reports and J.P. Morgan estimates.

Specifically on the services side Alstom sees ~1,000bps in margin expansion opportunity or ~\$500mm over the long term with ~300bps coming from Material costs (sourcing, design and life extensions), ~300bps from Outage cost (field automation, cross training, efficiencies), ~200bps from Repairs (shop automation, improved yields) and ~200bps from Digital (condition based maintenance & monitoring).

Figure 181: Service Margin Opportunity Across Power Segments



Source: Company reports and J.P. Morgan estimates.

We don't see the overall targets as unrealistic given majority are from footprint and headcount reduction which are generally more straightforward to execute on. Doing a rough rev/employee analysis and keeping the employees in France intact, we see ~\$2B in opportunities. In addition looking at the remaining ~\$1B or so of which ~\$500-600mm that are not headcount related, ~\$300mm are related to running the businesses better, a function of the decline in base business over the course of the closing of the acquisition. Net-net, we see these targets as fair with little risks from an execution standpoint.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 142: ALO Rev/Employee Analysis

GE Power + Renewables Water + Energy Connection Employees (ex-ALO)	68,000
GE Power + Renewables Water + Energy Connection Sales (ex-ALO, \$mm)	34,099
Rev/Employee (000s)	501
ALO Employees	65,000
ALO Sales	14,350
Rev/Employee	221
Combined Sales (\$mm)	48,449
Rev/Employee (using current GE ,000s)	501
Employees Needed	96,617
Current Combined Employees	133,000
Difference	36,383
France Employees (no reduction)	10,000
Employee Reduction Opportunity	26,383
Cost/Employee (000s)	75
Potential Savings (\$mm)	1,979

Source: Company reports and J.P. Morgan estimates.

Backlog Dynamics/Quality

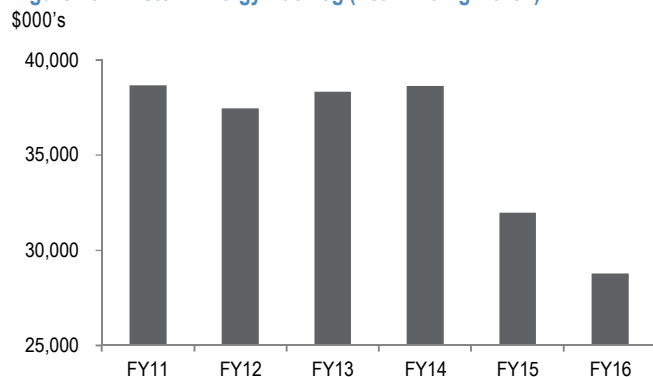
Alstom hired Bechtel to go through anything in backlog that is >\$100mm in orders, and management is paying close attention to few projects, which they would like to approach differently in terms of cost and delivery. However, our conversations with management and comments on conference calls suggested that they have a good handle on majority of Alstom's contracts to make sure risks in backlog are properly provisioned on day 1. There are some risks on the renewables side, particularly in onshore Wind in Brazil where management has seen delays in ramping up towards their target cuts. Even within Hydro there have been headwinds related to product mix linked to new product introduction in recent quarters and sees this mix gradually improving over time. Looking at recent backlog trends, comparing ALO's FY15 (March) backlog vs 1Q16 (Mar-16) backlog shows a ~10% drop y/y (~25% drop over two years), suggesting dramatic weakness driven partially by customer uncertainty which had dried new orders and a likelihood that GE has moved away from few of the riskier contracts in their backlog.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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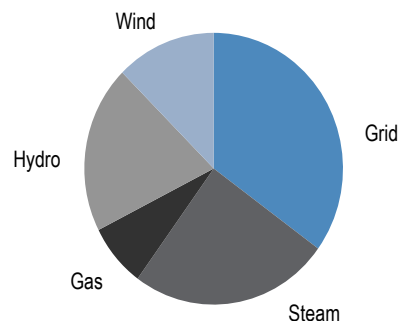
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Figure 182: Alstom Energy Backlog (Year Ending March)



Source: Company reports and J.P. Morgan estimates

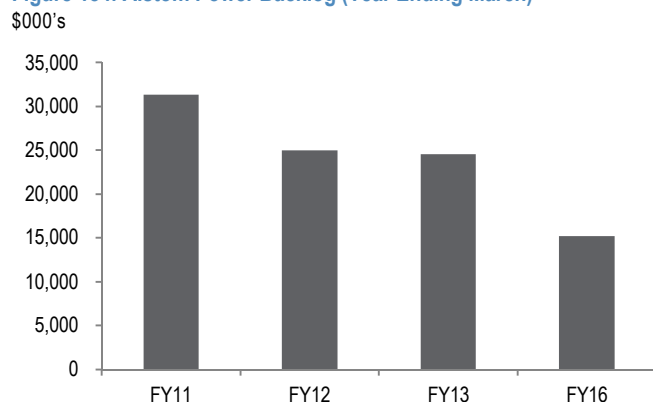
Figure 183: Alstom Equipment Backlog Mix



Source: Company reports and J.P. Morgan estimates.

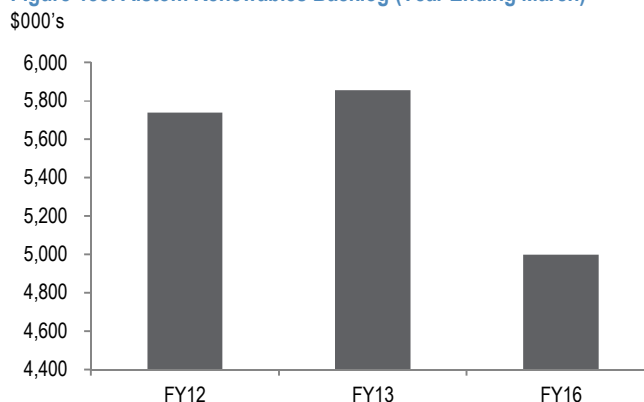
Looking at the sub-segments, backlog is down ~40% for Power since FY13 (Marh-13) in USD terms (down 30% in EUR) while Renewables is down ~15%.

Figure 184: Alstom Power Backlog (Year Ending March)



Source: Company reports and J.P. Morgan estimates

Figure 185: Alstom Renewables Backlog (Year Ending March)



Source: Company reports and J.P. Morgan estimates

Net-net - our accretion model is largely in-line with management framework

To start, on reporting structure, GE will report revenue for all the Alstom assets acquired including the stake in the JVs whereas reported profits will only take into account GE's contribution in the JVs. Note management has provided near and long-term accretion targets of \$0.05 in 2016 and ~\$0.15-0.20 by 2018.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 143: Alstom Revenue Model

Revenue Breakdown	2015	2016E	2017E	2018E	2019E	2020E
Alstom Power	917	7,400	7,635	7,882	8,141	8,413
Power Services	700	4,700	4,935	5,182	5,441	5,713
Gas Power	50	700	700	700	700	700
Steam Power	167	2,000	2,000	2,000	2,000	2,000
GE Ownership	867	7,100	7,335	7,582	8,141	8,413
Alstom Renewables	87	2,000	2,000	2,000	2,000	2,000
Onshore Wind	100	600	600	600	600	600
Offshore Wind	17	100	100	100	100	100
Hydro	217	1,300	1,300	1,300	1,300	1,300
GE Ownership	100	600	600	600	2,000	2,000
Alstom Grid Solutions	952	5,000	5,000	5,000	5,000	5,000
GE Ownership	0	0	0	0	5,000	5,000
GE Ownership (100%)	967	7,700	7,935	8,182	15,141	15,413
JVs	989	6,700	6,700	6,700	0	0
Reported Revenue	1,956	14,400	14,635	14,882	15,141	15,413

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 144: Alstom Profit Accretion Model

Profit Breakdown	2015	2016E	2017E	2018E	2019E	2020E
Reported Margin	-13.1%	4.5%	8.8%	13.4%	17.0%	18.8%
Underlying Margin	-0.3%	1.3%	1.7%	1.8%	2.0%	2.1%
Underlying Profit	(6)	194	246	274	301	329
Synergies	0	1,150	1,750	2,450	2,750	3,000
Other	(250)	(800)	(600)	(525)	(475)	(425)
Acquisition Accounting	(250)	(700)	(600)	(525)	(475)	(425)
Integration/Deal Costs	0	(100)	0	0	0	0
JV Minority Interest	0	(105)	110	210	0	0
Segment Profit Accretion	(256)	649	1,286	1,989	2,576	2,904
Power	(80)	424	996	1,519	1,806	2,034
Renewables	(69)	75	70	170	270	270
Grid	(85)	150	220	300	500	600
Corporate	(160)	(1,225)	(700)	(250)	(100)	0
Investments	(50)	(1,000)	(600)	(200)	(100)	0
Acquisition Accounting	(110)	(225)	(100)	(50)	0	0
Net Profit Accretion	(416)	(576)	586	1,739	2,476	2,904
After-Tax Accretion	(347)	(374)	381	1,130	1,610	1,888
Tax Benefits	350	650	200	200	200	200
EPS Accretion	\$0.00	\$0.03	\$0.07	\$0.16	\$0.22	\$0.25

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Corporate Dynamics in 2016-2018

This is a key aspect of the ultimate bottom line EPS and can move dramatically in a given year based on the magnitude of restructuring/gains, pension and other corporate costs. Management has generally guided to the playbook of restructuring to offset gains with other corporate costs & eliminations and operating pension the other key moving parts, both of which are incorporated in the 'adjusted' corporate number than ultimately flows through the bottom line. For 2016 specifically, management sees ~\$0.25 in gains, with ~\$0.20 from the appliance deal and expects this to be offset completely by restructuring. Overall adjusted corporate was guided to ~\$2-2.1B and with the 1Q start that was below the implied quarterly run rate, we see slightly <~\$2B as likely for the year.

Table 145: Annual Corporate Expense (JPMe)

\$mm

	2014	2015	2016E	2017E	2018E
Gains/impairments	(126)	1,497	3,859	700	250
Principal retirement plans, GAAP	(2,313)	(2,760)	(2,000)	(2,000)	(2,000)
Total Restructuring	(1,571)	(1,734)	(3,359)	(700)	(250)
Alstom Restructuring/other	0	(160)	(1,225)	(700)	(250)
Restructuring expense/other	(1,571)	(1,574)	(2,134)	0	0
Other Corporate Costs & Eliminations	(2,215)	(2,111)	(1,950)	(1,850)	(1,750)
Adjusted Corporate	(2,408)	(2,107)	(1,901)	(1,850)	(1,750)
Restructuring + Gains EPS impact			\$0.00	\$0.00	\$0.00

Source: J.P. Morgan Estimates.

“Core” Industrial EBIT - Below we present a view of “core” industrial EBIT, or segment profit less operating corporate expense, a number management is not guiding to from a margin perspective vs just segment profits prior.

Table 146: “Core” Industrial EBIT and EPS (Ex-Restructuring/Gains, Pension, NBCU)

\$mm except where noted

	2015	2016E	2017E	2018E
Industrial Segment profits	17,966	18,070	19,499	21,120
Adjusted Corporate	(2,107)	(1,901)	(1,850)	(1,750)
Core industrial EBIT	15,859	16,170	17,649	19,370
Margin	14.8%	14.1%	15.4%	16.4%

Source: Company data, J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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GECS – Cash From Asset Sales Below Plan So Far; GECAS Peer Valuations Weak; Ongoing Cash Generation Negative

As of now there is no excess cash to come out of GECS

In April '14 GE announced shrinkage to \$90 B in core verticals generating \$1.5 B of net income (excluding \$1 B in non-operating carry costs for excess debt and \$300 mm in preferred costs), returning \$35 B by '18. The plan highlighted delivering \$90 B to shareholders by '18. Management talked about future GE Capital being valued \$20 B on the \$14 B of tangible book and the modest amount of net income. Looking at the progress so far, we see the total capital raised from asset sales is tracking below plan with ~80% of the total target announced but with only ~70% of the target capital raised so far. We also note that the ENI for assets have come down by ~10% on average since Dec'14 which in our view could ultimately result in slightly lower than the \$35B targeted capital raise.

Table 147: GECS Announced Deals

Deals Summary	Segment	ENI (\$B)	ENI 2014 (\$B)	Capital Raised (\$mm)	Capital/ENI
Poland Bank	Consumer	2.1	2.8	200	0.10
Franchise Finance US Hotel Business + Canadian Franchise Finance	CLL	1.7	2.4	200	0.12
India CLL	CLL	0.4	0.4	50	0.13
Stake Sale in Hyundai Capital	CLL	0.9	0.8	600	0.67
CLL business in Japan, including Capital Finance, Fleet Service and Vendor Finance	CLL	4.6	5.4	600	0.13
France and Germany Equipment and Receivable Finance	CLL	7.5	8.2	1,300	0.17
Mexico Equipment Lending and Leasing	CLL	1.1	1.5	100	0.09
UK Home Lending Portfolio Tranche	CLL	5.8	7.1	400	0.07
Sankaty Capital	CLL	1.7	2.1	100	0.06
Commercial Distribution Finance, North American Vendor Finance and Corporate Finance platforms	CLL	29.6	30.2	4,200	0.14
Global Aircraft Leasing	CLL	2.1	2.4	300	0.14
Rail Transactions (Repair, Remaining Railcar leasing)	CLL	4.0	2.3	1,300	0.33
UK Home Lending Portfolio	CLL	3.7	3.9	400	0.11
Mubadala JV	CLL	1.5	1.8	700	0.47
Transportation Finance	CLL	8.7	7.6	700	0.08
Healthcare Financial Services	CLL	8.3	9.6	1,500	0.18
GE European PE Unit	CLL	2.5	3.2	400	0.16
GE Fleet Management AU/NZ, Mexico, Europe (does not include Japan)	CLL	8.8	8.8	1,800	0.20
US Sponsor Finance and \$3B bank loan portfolio (to Canada Pension)	CLL	10.0	12.3	2,500	0.25
Sponsor senior secured loan program	CLL	1.4	2.3	250	0.18
Real Estate (April 10th announcement)	Real Estate	26.5	28.3	5,000	0.19
Real Estate (1Q reductions)	Real Estate	6.0	6.0		
UK Home Lending	CLL	1.2	1.3		
Cembra	CLL	0.4	0.7		
AsiaSat (sold 37% stake)	CLL	0.5	0.5	2,000	0.11
Penske (20% stake sold)	CLL	1.0	0.5		
Australia/NZ Consumer Lending	Consumer	4.3	7.0		
Other (UK Home lending tranche)	Consumer	1.7	0.0		
Budapest Bank	Consumer	3.3	3.3		
Other	Other	2.9	2.9	500	0.17
Total		154.2	165.6	25,100	0.15
Target Total		202.0	202.0	35,000	0.17

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 148: Asset Disposal Target vs Completed

\$B				
	Target Disposition Plan (Based on 2014 Ending ENI)	Deals Completed	Capital Raise Target	Capital Raised
Real Estate	35	35		
CLL	130	116		
Consumer	37	14		
Total	202	166	35	25
% completed		82%		72%

Source: Company reports and J.P. Morgan estimates.

Vertical assets earnings

1Q earnings from the vertical assets came in ahead of the quarterly run rate with ~\$496mm in net earnings in the quarter but this included ~\$190mm in after tax gains (~\$130mm net of impairments) or ~\$0.02 in overall EPS. Management now sees overall earnings in the \$1.5-1.6B range for 2016 or ~\$0.17 in EPS and our model is in-line with guidance. Beyond 2016, we model as per prior management's prior long-term framework of ~\$1.45B in earnings through 2018.

Table 149: Vertical Assets Earnings 1Q14-1Q16

\$mm

	1Q14	2Q14	3Q14	4Q14	1Q15	2Q15	3Q15	4Q15	1Q16		2016E	2017E	2018E
EFS	153	76	61	112	35	109	(38)	(19)	137				
GECAS	352	343	133	217	307	361	313	354	332				
EFS + GECAS	505	419	194	329	342	470	275	335	469				
Vertical Assets overall	530	451	228	412	352	531	351	438	496		1,550	1,500	1,450
<i>Preferred Costs</i>		<i>(161)</i>		<i>(161)</i>		<i>(161)</i>		<i>(161)</i>			<i>(322)</i>	<i>(322)</i>	<i>(322)</i>

Source: J.P. Morgan Estimates

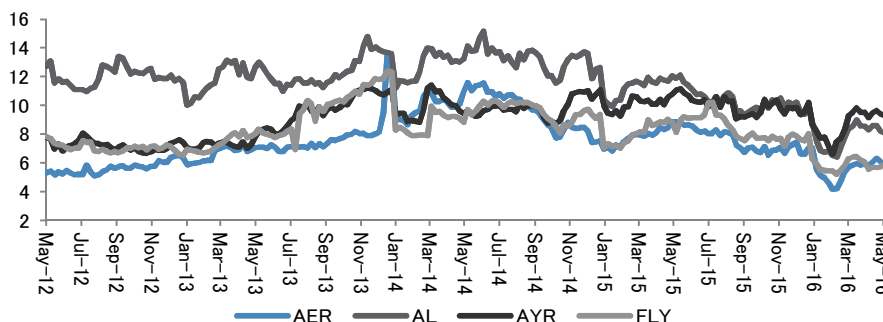
GECAS trends stable, but public peer valuations low: We believe GECAS will be the key driver for this segment, contributing ~80% of vertical assets earnings. To start, looking at public peers like AER, AL, AYR and FLY, we note that FY2 multiples have eroded significantly over the last year driven by concerns driven by concerns surrounding 1) lower fuel for longer will translate into aircrafts retaining more aircraft at the expense of new orders, 2) deferrals of standing backlog/quality, 3) concerns over China/EM demand in general and 4) Possible excess of wide body aircraft in the market, triggered by Delta's CEO comments, saying they could buy a 10-year old B777 at prices well below what most market participants assumed. However, as highlighted in our Aviation macro section, while some of the concerns have merit, we think they are somewhat overblown and the health of the aviation cycle remains sound with air traffic continuing to grow well above GDP rates with global traffic rates accelerating from 2015 levels (6.5% y/y) so far YTD16 (+7.8% y/y). In addition, wide body aircrafts account for <20% of the GECAS fleet and region wise Asia (including china) too less than ~20% of the fleet.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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Figure 186: FY2 P/E multiple for Aircraft Leasing Peers Average ~7.5x currently



Source: Bloomberg. Prices as of May 4, 2016. Price-to-earnings ratios are based on blended forward 12-month estimates.

EFS end markets remain tough, but contributes less than 20% of earnings now:

Given the exposure to Oil & Gas markets we expect trends here to remain tough with possible impairment charges going forward. The business has sizeable exposure to Power markets as well, but given its heavy on gains, earnings here can be quite volatile. Overall, EFS contributes <20% of the vertical assets net income (was just ~5% in 2015) and end market risk here remains to the downside.

Cash Generation Negligible from Vertical Assets for Foreseeable Future

Note that, post the GECS asset sales announcement, management stopped reporting the ~\$320mm in preferred costs to GECS earnings, despite this being an ongoing drag through to 2021. While we exclude this from our modeling assumptions, in order to match the consensus reporting style, we factor this in our valuation analysis, which would imply EPS of ~\$0.13-0.14 for the vertical GECS assets. In addition, looking and true continuing ops from GE capital over the next few years, we don't see the segment generating any earnings for the next two years driven by HQ run off costs through 2017 and debt carrying costs which run through 2018 at a ~\$800mm before normalizing at a ~\$200mm level by 2022, which means true cash generation from these assets is negligible for the foreseeable future. In addition, we also highlight that 2015 had roughly \$130mm in benefits from net gains/impairments with ~\$130mm in 1Q16 already (all of this is non-cash). Even in 1Q16, continuing ops from GE capital overall was a negative ~\$900mm vs ~\$496 in positive vertical asset earnings. All this is not new information, but shows the lack of flexibility of cash coming from GE capital to GE Industrial over and above the announced ~\$35B from asset sales, and a key aspect when it comes to valuing GE on a FCF/share basis vs peers (discussed more in the valuation and FCF sections).

Table 150: Vertical Assets Earnings vs Actual Continuing Operations

\$mm

	2015	2016E	2017E	2018E
GE Capital Vertical Earnings as Modeled by Cons.	1,666	1,550	1,500	1,450
HQ Run-off Costs*	(1,000)	(1,800)	(200)	
Debt Carrying Costs		(800)	(800)	(800)
Preferred Costs	(320)	(320)	(320)	(320)
Total Continuing Earnings	346	(1,370)	180	330

Source: J.P. Morgan Estimates. Management had guided to ~\$3B over 2015 and 2016 but given the faster than expected closure of asset sales, we believe majority of these costs come in 2016.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Micro Debates

Debate #1: FCF Conversion is Weak, with Limited Upside

Dissecting the cash story at GE has always required more work than at others, given the consolidation of industrial and finance assets. Despite the breakup, this is still not such a simple story, with management presenting adjusted numbers that exclude a GE Capital business that will be throwing off very little cash despite accounting for ~10% of reported EPS, and an Alstom business that is currently generating negative cash despite a positive book EPS contribution. Add to this the coming ramp in pension funding (>\$2B mandatory for the big GE Pension Plan in 2017), a run rate of >\$1B in other investing cash flows related to things like software, ERPs, licensing, engineering tools, and JVs, including supplier investments and the GE Ventures business, and the conversion math becomes even more challenging. There also remain some issues with regards to GE Capital and its influence on comparability, as well as, more recently, the cash poor earnings being thrown off from LTSA contract adjustments.

Looking out over the next three years, we see FCF/share and conversion deteriorating in '16 and '17 prior to getting a bit better in '18. Our estimates and our walks using three different definitions discussed in subsequent pages are below, including a simplified view using EPS, broken down by GECS contribution, ALO earnings (using a certain improved conversion rate) and a "core" GE Industrial FCF per share number. For '18, a more normal year (lower pension contributions and better ALO FCF), we show how our \$1.85 estimate turns into ~\$1.35 in FCF per share, or 70-75% conversion, or ~\$1.45, and 90% conversion by GE's definition that excludes ALO and GE Capital from the calculation. However, on what we see as a more reasonable approach, that conversion is closer to 72% all in, and on the most conservative view it's 67%.

Table 151: FCF Conversion by Three Different Definitions

In millions, except per share data

	GE Defined FCF View		JPM Modified FCF View		Most Conservative FCF View	
	2017E	2018E	2017E	2018E	2017E	2018E
Consensus EPS	<u>\$1.76</u>	<u>\$2.03</u>	<u>\$1.76</u>	<u>\$2.03</u>	<u>\$1.76</u>	<u>\$2.03</u>
Difference	<u>0.12</u>	<u>0.18</u>	<u>0.12</u>	<u>0.18</u>	<u>0.12</u>	<u>0.18</u>
JPMc EPS	\$1.65	\$1.85	\$1.65	\$1.85	\$1.65	\$1.85
GE Cap EPS	<u>0.17</u>	<u>0.17</u>	<u>0.17</u>	<u>0.17</u>	<u>0.17</u>	<u>0.17</u>
Implied Industrial EPS	\$1.48	\$1.68	\$1.48	\$1.68	\$1.48	\$1.68
Implied Industrial Net Income	\$12,840	\$14,229	\$12,840	\$14,229	\$12,840	\$14,229
Alstom Net Income	<u>581</u>	<u>1,330</u>	<u>581</u>	<u>1,330</u>	<u>581</u>	<u>1,330</u>
Core Net Income	\$12,259	\$12,899	\$12,259	\$12,899	\$12,259	\$12,899
Core FCF	\$7,803	\$11,601	\$6,803	\$10,601	\$6,103	\$9,901
ALO FCF	203	665	203	665	203	665
GE Cap FCF (No dividend)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total FCF	\$8,006	\$12,266	\$7,006	\$11,266	\$6,306	\$10,566
FCF/Share	\$0.92	\$1.44	\$0.80	\$1.33	\$0.72	\$1.24
GE P/FCF	33.1	21.1	37.9	23.0	42.1	24.5
Core Industrial FCF conversion	64%	90%	55%	82%	50%	77%
Reported FCF Conversion (all-in)	56%	78%	49%	72%	44%	67%

Source: JPMorgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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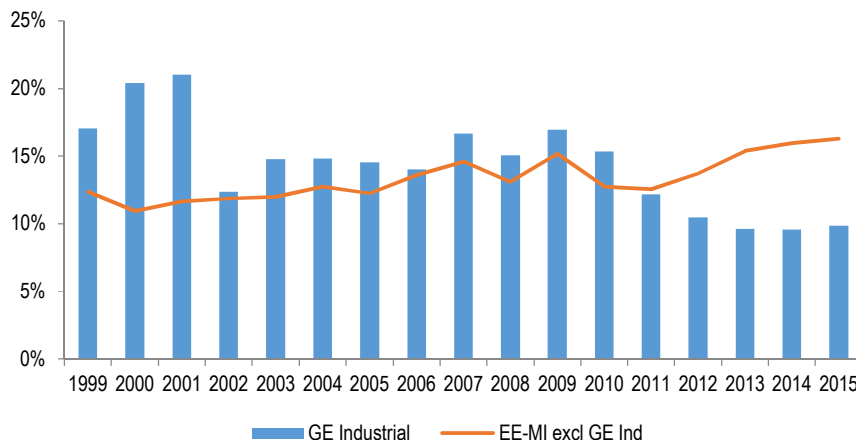
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A Quick Look a GE Cash Conversion versus the Group

Free cash flow return on sales has compressed at GE Industrial over the past 15+ years, while results at others in our group have, on average, improved during that time.

Figure 187: GE Industrial FCF Margins Have Compressed While EE/MI Peers Expanded

FCF before cash interest and taxes, % of sales

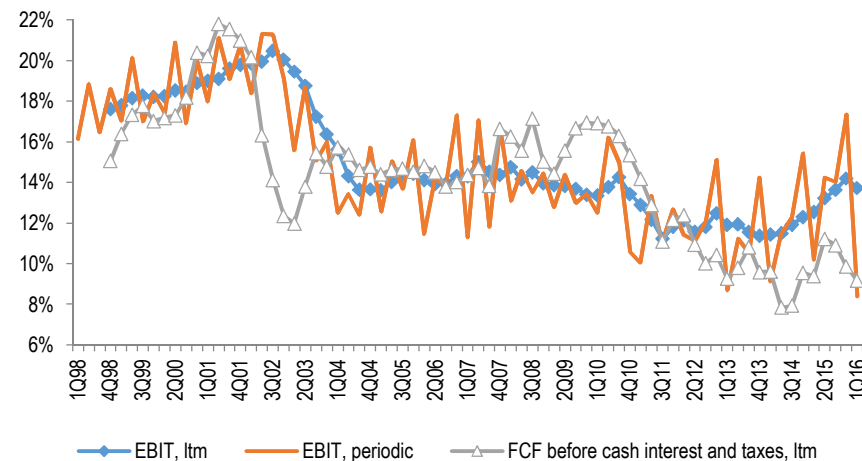


Source: Company reports, and JPMorgan estimates. Note: EE-MI includes DHR, HON, UTX, MMM, EMR, ROK, DOV, IR, PNR.

While not surprising given the reported EBIT margin compression, quality has also deteriorated over the past several years. Mostly discussed as FCF conversion (FCF divided by net income), in this illustration we show it as the gap between Industrial FCF % of sales (before cash interest and taxes) and adjusted EBIT margins (adds back non-operating pension since 2011). While adjusted EBIT margins have expanded, FCF margins (before cash interest and taxes) have gone nowhere, and today the gap between them is the widest it's been since the power bubble burst, highlighting a quality of earnings problem.

Figure 188: GE Industrial FCF Margins (Before Interest and Taxes) Going Nowhere

% of sales



Source: Company reports, and JPMorgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

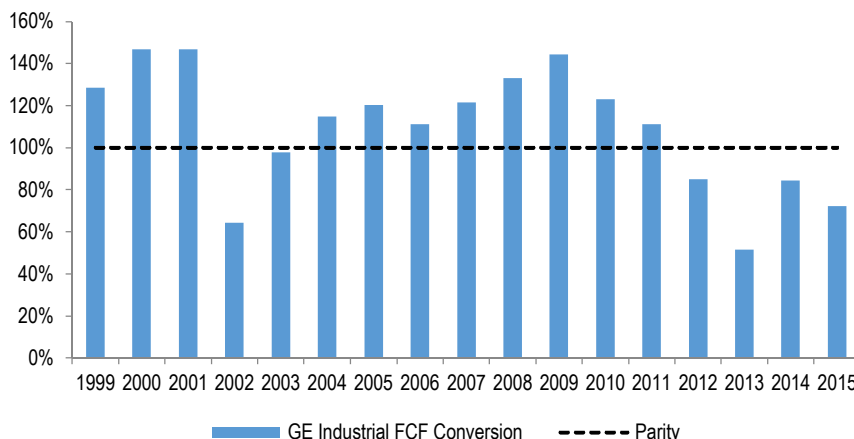
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Putting this into the conventional framework of conversion (FCF divided by net income) shows that GE's Industrial earnings are converted into less FCF today than at any time since 2002, which was impacted by working capital, namely a decline in progress payments as power turbine orders crashed.

Figure 189: GE Industrial FCF Conversion Has Deteriorated

Industrial FCF % of Industrial Net Earnings

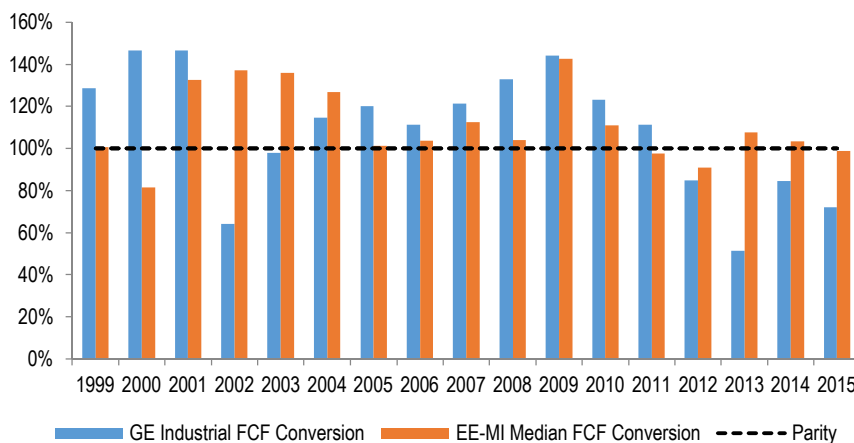


Source: Company reports, and JPMorgan estimates.

Quality of earnings, defined here as FCF conversion, is not just a GE problem, as the entire group is converting less of its reported net income into FCF these days. The absolute FCF generation is still solid overall, but the issue is that many have changed to a lower quality reporting structure, with consensus estimates based on non-GAAP numbers, per management guidance (similar to how GE now reports, excluding non-operating pension, but including non-cash gains, offset by mostly cash restructuring).

Figure 190: GE Industrial FCF Conversion vs EE-MI Group

FCF Conversion (FCF divided by Net Income)



Source: Company reports, and JPM estimates. Note: EE-MI includes DHR, HON, UTX, MMM, EMR, ROK, DOV, IR, PNR, ROP, TYC.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

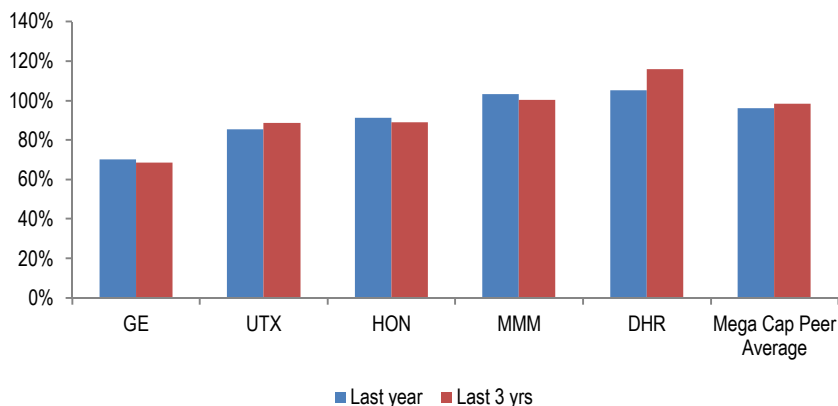
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But GE has become the poster child of weaker cash conversion. On a like for like basis, FCF conversion last year of 75%, and over the last three years we estimate ~70%, compares to its mega cap peers at ~100%. We explore some of the reasons for GE's weaker cash conversion here.

Figure 191: GE Lags Mega Cap Peer Group on FCF Conversion

FCF Conversion as Traditionally Defined



Source: Company reports, and JPMorgan estimates.

How GE Defines its Free Cash Flow

To start, we take a look at how GE defines its free cash flow, to level set the conversation. While the above considers only the industrial portion of FCF, which we define as Industrial operating cash flow minus capex (GE CFOA, less dividends from GE Capital, minus capex), management in its definition includes (1) the dividend from GE Capital and (2) proceeds from P&E sales. It then adds proceeds from principal business dispositions, to come to an all-in number (similar to proceeds from P&E sales, this is a recent change to their definition). Note the large gap between “FCF + dispositions” and GE Industrial FCF (GE Ind CFOA minus capex plus P&E sales). We think the “FCF + dispositions” number should not be considered a sustainable number given that it includes GE Capital dividends and asset sales, and that the focus should be on GE Industrial FCF.

Table 152: Free Cash Flow, GE defined

In billions of US\$

	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15
GE Ind CFOA	8.4	10.1	13.6	15.2	8.1	9.5	12.1	13.8	14.9	16.0	16.7	16.6	14.7	12.1	11.4	8.3	12.2	12.1
Cap Dividends	1.7	1.7	1.8	2.0	2.0	3.4	3.1	7.8	9.7	7.3	2.4	0.0	0.0	0.0	6.4	6.0	3.0	4.3
GE CFOA	10.0	11.8	15.4	17.2	10.1	12.9	15.2	21.6	24.6	23.3	19.1	16.6	14.7	12.1	17.8	14.3	15.2	16.4
Capex	(2.0)	(2.0)	(2.5)	(2.9)	(2.4)	(2.2)	(2.4)	(2.8)	(3.6)	(3.0)	(3.0)	(2.4)	(2.4)	(3.0)	(3.9)	(3.7)	(4.0)	(3.8)
P&E sales	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.6	0.9
FCF	8.0	9.7	12.9	14.3	7.7	10.8	12.8	18.8	21.0	20.3	16.1	14.2	12.3	9.1	13.9	11.0	11.8	13.5
Divestitures																1.3	0.6	1.7
FCF + dispositions																12.3	12.4	15.2

Note:

GE Industrial FCF 6.3 8.1 11.1 12.4 5.7 7.3 9.7 11.0 11.3 13.0 13.7 14.2 12.3 9.1 7.5 5.0 8.8 9.2

Source: Company reports, and JPMorgan estimates.

There are also some quality issues with regards to GE Capital and its influence on comparability. Notably, this all in number includes receivables factored internally, a

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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J.P.Morgan

somewhat legitimate business practice, but a new disclosure shows a cumulative \$13B in receivables that remains on the GE Capital balance sheet, a number that grew by \$0.5B last year. In context of the remaining GE Capital, the \$13B balance is large compared to the expected \$90B of ENI (2017), and it also shows that the consolidated entity is not generating as much cash on a net basis as it would seem at GE Industrial (these transactions increased GE CFOA by \$1.6B in 2015). In an illustration of a conservative way to equalize the comparison to other Industrials, we merely subtract GE Capital FCF from GE Consolidated FCF, getting us to \$7.7B versus the \$9.2B reported. Over a 3 year period the the reported GE Industrial FCF has been on average \$0.7B higher than this implied number (see below).

Table 153: Illustrative Free Cash Flow Walk, Most Conservative Definition

In billions

	2013	2014	2015	
GE Consolidated GE CFOA	\$28.5	\$27.7	\$19.9	
<u>GE Consolidated Capex</u>	<u>(4.0)</u>	<u>(4.2)</u>	<u>(4.3)</u>	
GE Consolidated FCF	\$24.5	\$23.5	\$15.6	
GE Capital CFOA	\$19.3	\$17.9	\$9.6	
<u>GE Capital Capex</u>	<u>(0.9)</u>	<u>(1.5)</u>	<u>(1.7)</u>	
GE Cap FCF	\$18.4	\$16.4	\$7.9	
GE Industrial FCF Implied (Consolidated minus Capital)	\$6.1	\$7.0	\$7.7	
Reported Industrial FCF	\$5.0	\$8.8	\$9.2	3-yr avg
<i>Difference</i>	<i>(1.1)</i>	<i>\$1.8</i>	<i>\$1.4</i>	<i>\$0.7</i>
<i>Note: Intercompany Receivables transactions</i>	<i>\$0.1</i>	<i>\$2.2</i>	<i>\$1.6</i>	<i>\$1.3</i>

Source: Company reports and JPMorgan estimates.

Dissecting GE Cash from Operating Activities (CFOA)

In this section we walk down the statement of cash from operating activities at GE, framing the forward debate through the eyes of the historical results. All commentary below relates to the period from '98-'15, which can be seen in the table.

Table 154: GE Cash From Operating Activities

In billions of US\$

	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15
Net earnings	9.3	10.7	12.7	13.7	14.1	15.0	16.6	16.4	20.8	22.2	17.4	11.0	11.6	14.2	13.6	13.1	15.2	(6.1)
Discops	0.0	0.0	0.0	0.4	1.0	0.6	0.0	0.0	0.0	0.3	0.7	0.2	1.0	(0.1)	1.0	2.1	0.1	7.8
D&A	2.3	2.3	2.2	2.5	2.2	2.3	2.5	2.5	2.6	2.1	2.2	2.3	2.3	2.1	2.3	2.4	2.5	2.5
GECS retained	(2.1)	(2.8)	(3.4)	(3.6)	(2.7)	(4.3)	(5.1)	0.6	(0.8)	(5.1)	(5.4)	(1.6)	(3.1)	(6.4)	(1.0)	(2.3)	(4.3)	12.3
Deferred taxes	0.6	0.7	0.5	0.6	1.0	0.4	(0.2)	(0.3)	0.8	0.6	(0.4)	(0.5)	(0.4)	(0.3)	(0.3)	(2.6)	(0.5)	(1.8)
Working cap	0.8	0.2	2.9	3.1	(5.0)	(0.1)	0.1	0.6	0.4	2.1	2.4	3.1	(0.7)	(0.7)	(0.8)	(0.1)	(1.0)	(0.4)
Receivables	0.5	0.2	(0.6)	0.2	(0.5)	0.6	(0.9)	(0.3)	0.8	0.0	(0.2)	3.1	(1.0)	(0.4)	1.2	(1.4)	(0.5)	0.7
Inventories	0.1	(0.1)	(0.7)	(0.9)	(0.1)	0.9	(0.5)	(0.6)	(1.8)	(1.5)	(0.5)	1.2	0.4	(1.1)	(1.2)	(1.4)	(0.9)	(0.3)
A/P	0.2	0.1	0.8	0.4	0.7	0.7	1.9	1.0	0.4	(1.1)	0.2	(0.9)	1.1	1.9	0.2	0.8	0.9	0.3
Progress collect.	NA	NA	3.3	3.4	(5.1)	(2.3)	(0.5)	0.5	0.9	4.6	2.9	(0.3)	(1.2)	(1.1)	(0.9)	1.9	(0.5)	(1.0)
All other	(0.8)	0.6	0.4	0.5	(0.6)	(0.9)	1.3	1.8	0.8	1.2	2.2	2.0	4.0	3.4	2.9	1.5	3.1	2.1
Cont ops subtotal	10.0	11.8	15.4	17.2	10.1	12.9	15.2	21.6	24.6	23.3	19.1	16.6	14.7	12.1	17.8	14.3	15.2	16.4
Discops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(0.9)	(0.0)	0.0	0.0	0.0	0.0	(0.0)	(0.0)	(0.0)
All ops total	10.0	11.8	15.4	17.2	10.1	12.9	15.2	21.6	24.6	22.4	19.1	16.6	14.7	12.1	17.8	14.3	15.2	16.3
<i>Note:</i>																		
<i>Industrial CFOA</i>	<i>8.4</i>	<i>10.1</i>	<i>13.6</i>	<i>15.2</i>	<i>8.1</i>	<i>9.5</i>	<i>12.1</i>	<i>13.8</i>	<i>14.9</i>	<i>16.0</i>	<i>16.7</i>	<i>16.6</i>	<i>14.7</i>	<i>12.1</i>	<i>11.4</i>	<i>8.3</i>	<i>12.2</i>	<i>12.0</i>

Source: Company reports, and JPMorgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
12 May 2016

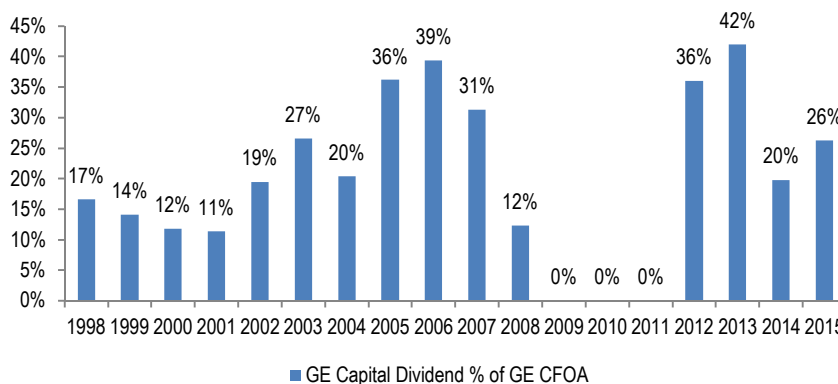
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Net earnings: Earnings have been the biggest contributor to GE CFOA over time ('98-'15), comprising 75% of the total on average, ranging from a low of 60% to a high of 125%. Given the weighting, it's clear that earnings impact GE CFOA.

Of this total earnings number, industrial has represented on average 70-75%, after accounting for the portion retained by GECS. We point out that there is a difference now in the number reported here and what analyst consensus estimates as earnings, given the company's relatively recent practice of presenting "operating earnings" that exclude the impact of "non-operating pension", a roughly 10% difference in reported (non-GAAP) versus GAAP. This obviously hurts conversion, all else equal.

It's also noteworthy that the Capital dividend has represented 25-30% of the earnings contribution on average. Using this definition, about 20% of GE CFOA has come from the capital dividend over time, ranging from zero during and immediately after the global financial crisis ('09-'11) to a high around 35-40% on several occasions.

Figure 192: GE Capital Dividend % of GE CFOA



Source: Company reports, and JPMorgan estimates.

D&A: This account has represented roughly 15% of GE CFOA, pretty consistent and self explanatory. Not much debate here.

Deferred taxes: While over time the impact has been close to zero, this can move around from year to year due in part to timing differences between book and cash taxes, which can impact GE CFOA in the short term. For example, in 2013 the GE cash tax rate was around 40% versus a book tax rate of in the high teens, reflecting the timing of taxes payments related to the NBCU divestiture. As a result, deferred taxes were a drag on the walk from net earnings to GE CFOA.

Working capital: Another area that can swing around from year to year but has netted close to a zero impact over time (roughly 1-2% of GE CFOA on average). There are some years such as in '02 when the impact can be hugely negative (power bubble burst, leading to a large drop in progress payments), while in others it has contributed as much as 20% to GE CFOA (in '00/'01 on progress payment increases, and '09 on receivable collections and inventory reduction). Post recession, working capital has been a drag of ~5% on the walk from net earnings to GE CFOA, on a combination of inventories and progress collections, partially offset by payables.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
12 May 2016

J.P.Morgan

All other operating activities: This is the most obscure category here. On average, it has represented ~10% of GE CFOA, although the contribution has grown larger in recent years (close to 20% of GE CFOA since the recession). While it isn't clear from the filings what categories are in here, we think there are many, including adjustments for gains and restructuring (cash versus non-cash), as well as pension and other items. GE's 10-K says that it consists primarily of "adjustments to current and noncurrent accruals, deferrals of costs and expenses and adjustments to assets."

Table 155: Key Components of GE CFOA

% contribution

	'98-'15	Comment
Net earnings	~75%	Industrial has been 70-75% of this, GECS dividend the remainder
D&A	~15%	Pretty consistent, though % can move due to changes in denominator
Deferred taxes	~0%	Volatile year to year due to timing differences
Working capital	~0%	Can swing around, particularly at cycle inflection points
All other	~10%	Most obscure category in the walk, likely includes many different variables
Total	100%	

Source: Company reports, and JPMorgan estimates.

Dissecting GE Investing Activities

Similar to above, in this section we walk down the statement of cash used in investing activities at GE to frame the forward debate. Once again, all commentary below relates to the period '98-'15 as seen in the table.

Table 156: GE Cash Used for Investing Activities

In billions of US\$

	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15
Gross capex	(2.0)	(2.0)	(2.5)	(2.9)	(2.4)	(2.2)	(2.4)	(2.8)	(3.6)	(3.0)	(3.0)	(2.4)	(2.4)	(3.0)	(3.9)	(3.7)	(4.0)	(3.8)
P&E proceeds	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.6	0.9
Divestitures	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	11.9	0.3	0.9	1.7	6.3	0.5	18.0	0.6	1.7
Acquisitions	(1.5)	(1.6)	(1.2)	(1.4)	(9.0)	(3.9)	(4.8)	(4.3)	(4.4)	(9.6)	(3.1)	(0.4)	(0.7)	(11.2)	(1.5)	(8.0)	(2.1)	(10.4)
Payment to GECS	0.0	0.0	0.0	(3.0)	(6.3)	0.0	0.0	0.0	0.0	0.0	0.0	(9.5)	0.0	0.0	0.0	0.0	0.0	0.0
All other	0.5	(0.4)	(0.2)	1.5	0.2	0.2	0.6	0.7	(0.0)	(1.7)	(5.2)	(0.2)	(0.6)	(0.4)	(0.6)	(1.9)	(1.1)	(1.3)
Cont ops subtotal	(3.0)	(4.1)	(3.9)	(5.8)	(17.4)	(5.8)	(6.6)	(6.4)	(4.5)	(2.4)	(11.1)	(11.7)	(1.9)	(8.2)	(5.4)	4.8	(5.9)	(12.8)
Discops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	(0.0)	0.0	0.0	0.0	0.0	0.0	0.0
All ops total	(3.0)	(4.1)	(3.9)	(5.8)	(17.4)	(5.8)	(6.6)	(6.4)	(4.5)	(1.4)	(11.1)	(11.7)	(1.9)	(8.2)	(5.4)	4.8	(5.9)	(12.8)

Source: Company reports, and JPMorgan estimates.

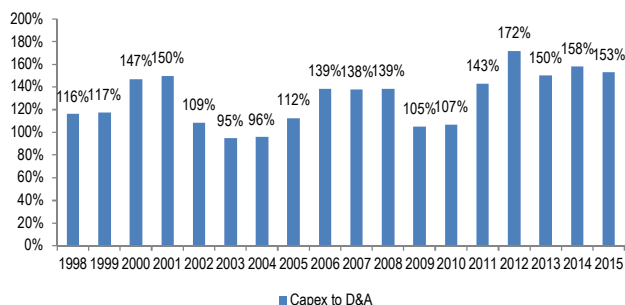
Gross capex: Referred to by GE as "additions to P&E", this category represents the company's investment in property and equipment needed to support its organic growth initiatives, improve productivity, etc. Capex to D&A has averaged 130% over time, while capex to sales has averaged 3.3%. Recent trends have been above that.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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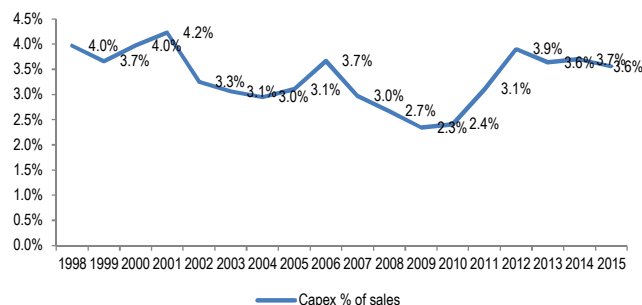
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Figure 193: Capex to D&A ratio



Source: Company reports, and JPMorgan estimates.

Figure 194: Capex to sales ratio

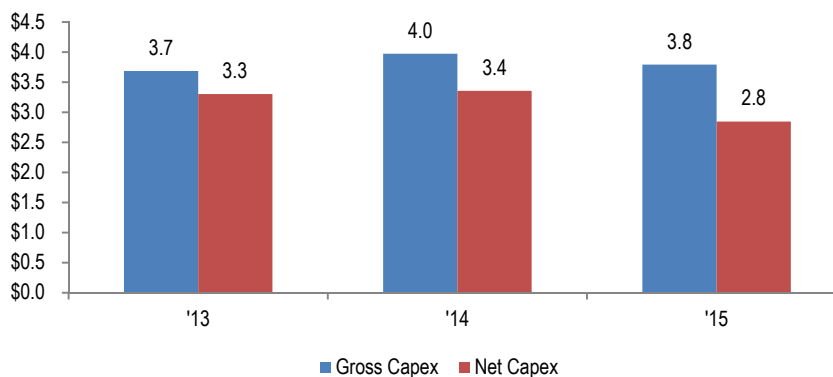


Source: Company reports, and JPMorgan estimates.

Dispositions of P&E: Proceeds from P&E dispositions made its way back into the cash flow statement just last year, when GE decided that adding this back was a more appropriate way to calculate free cash flow. As a result, there is limited historical disclosure (used to be included in the “all other investing activities” category). But the impact has been rising over the past few years. While gross capex has remained at relatively high levels, net P&E has declined (gross capex, minus proceeds from P&E sales), providing support to Industrial FCF.

Figure 195: GE Industrial Gross Capex vs Net P&E

In billions of US\$



Source: Company reports, and JPMorgan estimates.

Acquisitions and divestitures: GE has been very active here over time, with most of the recent adds focused on Oil & Gas (Lufkin, Dresser, Well Support division of John Wood, Wellstream), Aviation (Avio), and Power (Alstom, Converteam, Lineage), and Appliances and NBCU the most recent large divestitures. We view this as a discretionary source (use) of cash from investing activities, not something to consider in the walk to free cash flow to shareholders. However, we note that GE does include asset sales in its all-in definition of CFOA.

Capital contribution from GE to GECS: From time to time, GE has had to provide a cash infusion to GE Capital, and this is captured in this category. In '09, the capital contribution was \$9.5B, while in '01 and '02 it was \$3B and \$6.3B. We would include this activity in the calculation of Industrial FCF.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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All other investing activities: Like the catch all category in the operating cash flows (“all other operating activities”), the activities here are not clear. And until recently, this category also included “dispositions of P&E”. Separating it, however, has revealed a large cash outflow here, of \$1-2B annually over each of the last few years. Prior to that, it was generally a \$0.5B annual outflow, including the dispositions of P&E.

Our Outlook for GE CFOA

With background now provided, we dive into our outlook for GE CFOA. The high level numbers show improvement versus 2015, driven by Capital dividends in the near term (already committed to share buyback in consensus models), and GE Industrial CFOA beyond 2017.

Table 157: GE CFOA Expectations

In billions of US\$

	'15	'16e	'17e	'18e
GE Ind CFOA	12.1	12.8	11.3	15.3
Cap Dividends	4.3	18.0	11.0	2.5
GE CFOA	16.4	30.8	22.3	17.8

Source: Company reports, and JPMorgan estimates.

Digging a bit deeper, we walk down the statement from top to bottom, discussing our outlook for the various categories. Forecasts for the main categories are provided in the table below.

Table 158: GE Cash From Operating Activities

In billions of US\$

	'15	'16e	'17e	'18e
Net earnings	(6.1)	10.6	13.0	14.4
Discops	7.8	0.3	0.0	0.0
D&A	2.5	2.5	2.5	2.5
GECS retained	12.3	17.8	9.5	1.1
Deferred taxes	(1.8)	0.2	0.0	0.0
Working cap	(0.4)	0.1	0.0	(0.1)
Receivables	0.7	0.3	0.1	(0.5)
Inventories	(0.3)	0.5	0.1	(0.8)
A/P	0.3	(0.1)	(0.1)	0.6
Progress collect.	(1.0)	(0.6)	(0.1)	0.5
All other	2.1	(0.7)	(2.7)	(0.1)
Cont ops subtotal	16.4	30.8	22.3	17.8
Discops	(0.0)	0.0	0.0	0.0
All ops total	16.3	30.8	22.3	17.8

Note:

Industrial CFOA	12.0	12.8	11.3	15.3
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Source: Company reports, and JPMorgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Net earnings: On net earnings, we have already discussed our earnings outlook in detail, so won't rehash here. We expect that the difference between what analyst consensus estimates as earnings and the GAAP number will remain a headwind to conversion, given the practice of presenting "operating earnings" that exclude the impact of "non-operating pension". On the portion of income retained by GECS, we remind readers that the dividends from Capital will continue over the next few years as GE cashes out of the remaining businesses. In total, we expect an additional \$31B of extraction (\$18B in '16, \$11B in '17, \$2.5B in '18), following the \$4B received in '15. This expected cash is fully committed to the repurchase of GE stock, which we have modeled at \$20B in '16, \$13B in '17, and \$4.5B in '18. After this, we see no incremental cash from the remaining businesses at GECS (GECAS, EFS, etc). As shown in the table, these assets should be cash neutral, with income generated offset by costs for excess debt. In other words, all earnings generated by GECS will be retained by GECS. Thus, a source of cash that historically represented 20% of GE CFOA will no longer exist.

Table 159: GE Capital Pro Forma

In billions of US\$

	'15f	'16e	'17e	'18e	Comments
Verticals	1.7	1.6	1.5	1.5	Core income from retained verticals
Exits / HQ	(10)	(1)	(1)	0	Excess charges in '15, HQ run-off in '15-'17
Excess debt	0	(1)	(1)	(1)	Non-operating carry cost for excess debt
Continuing income	(8)	(0)	(0)	0	
Discops	(6)	1	0	0	2015: CRE, CLL; 2016: Consumer offset by Synchrony gain
Total income	(14)	1	0	0	

Source: Company reports, and JPMorgan estimates.

D&A: Next up, we expect D&A to move higher this year due to the Alstom acquisition, and then remain stable at the new higher level.

Deferred taxes: We assume cash taxes equal book taxes.

Working capital: Our current forecasts embed a neutral working capital impact. Management sees opportunity to drive higher conversion by improving the efficiency of its balance sheet, and they have specifically noted that Receivables are inefficient by \$2B, and they see about \$1B in excess inventory. We believe that working capital improvements would be positive if they occur, unlocking some cash from the balance sheet, though as always this is a one-time benefit, and does nothing to improve conversion of core operating cash x-working capital.

On Receivables, cash collection has improved over time, with the recent slight deterioration driven by the Alstom deal. Near term, we assume flattish performance on receivable days sales outstanding, with some modest improvement toward the end of the forecast period. Taking into account management commentary, removing \$2B would take it from the mid-40s to the high-30s, back in line with cycle best results.

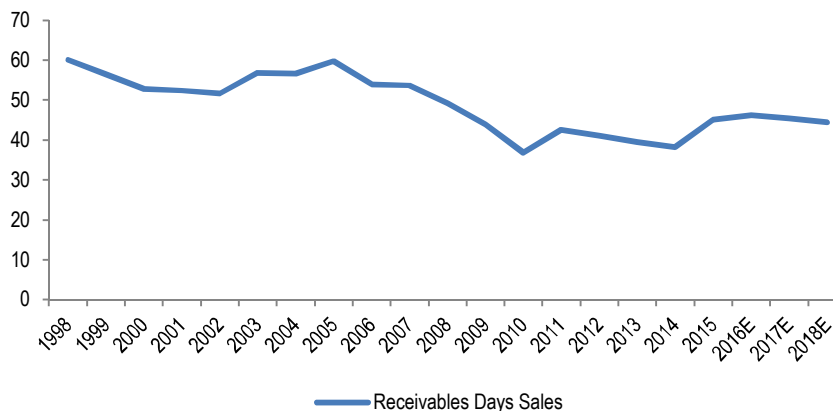
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 196: GE Receivables Days Sales

Days sales outstanding



Source: Company reports, and JPMorgan estimates.

What's interesting to point out here is the increase in factoring activity between GE and GE Capital. According to the 10-K, *"GE sells customer receivables to GE Capital in part to fund the growth of our industrial businesses. These transactions can result in cash generation or cash use. During any given period, GE receives cash from the sale of receivables to GE Capital. It also foregoes collection of cash on receivables sold. The incremental amount of cash received from sales of receivables in excess of the cash GE would have otherwise collected had those receivables not been sold, represents the cash generated or used in the period relating to this activity. The incremental cash generated in GE CFOA from selling these receivables to GE Capital increased GE's CFOA by \$1.6 billion, \$2.2 billion and \$0.1 billion in 2015, 2014 and 2013, respectively."* It's important to emphasize this intercompany transaction is likely ultimately a net use of cash on a consolidated basis, given the receivables are probably sold to GE Capital at a discount, though the impact to GE CFOA has been a large positive, as per the above. There has been no guidance on whether and to what extent this will continue going forward. At the end of 2015, GE industrial customer receivables factored through a GE Capital affiliate as financing receivables by GE Capital totaled \$13B, roughly 48% of the total consolidated current receivables, and a big number compared to the expected \$90B of ENI at GE Capital in 2017. This is up from \$12.5B in 2014 (54% of total).

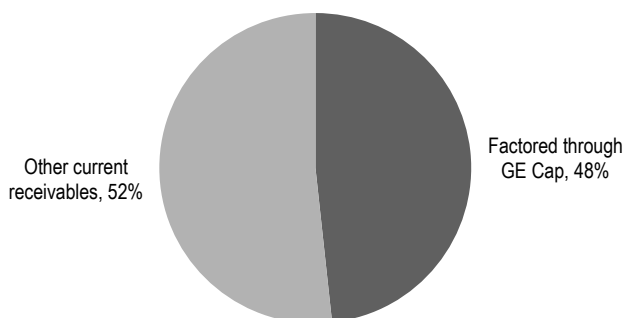
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 197: GE Consolidated Current Receivables

% of total

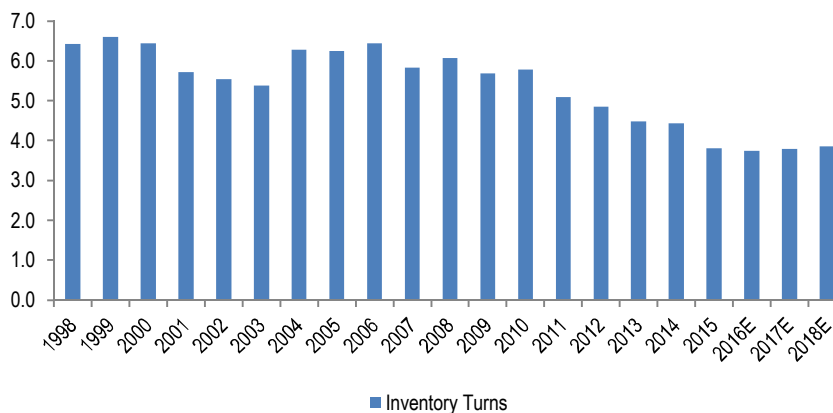


Source: Company reports.

Turning to inventories, turnover has deteriorated since the recession from a range of 5.5-6.5X prior to ~4X today. Part of this can be explained by the sale of NBCU, with the deconsolidation helping the optics from 2011 onward, given limited inventory related to that segment. However, the deterioration has continued since that time, with another step down on back of the Alstom deal. The company sees some of this as a cost of doing business. They cite Distributed Power as an example where visibility to sales can be limited, though when the orders come they require immediate delivery, and competition in this regard is fierce. Therefore, they end up making extra units to hold, not knowing how many units will be sold. We assume flattish performance near term, with some modest improvement toward the end of the forecast period. Taking \$1B out inventory does not suggest a ton of opportunity relative to the >\$20B in total. This could improve turns by just ~0.1X.

Figure 198: GE Inventory Turnover

Cost of sales divided by average inventories



Source: Company reports, and JPMorgan estimates.

All other operating activities: The moving parts for this category include pension, gains and restructuring, as described earlier. However, we think there may be other items at play here, such as LTSA contract adjustments.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Starting with pension, relative to the non-cash expense running through earnings, there has been much more limited cash contributions to the plans over the past several years. This has resulted in large add-backs on the walk from GAAP net earnings to operating cash flow. The table below shows recent history, in addition to our current forecasts. We highlight the \$1B reduction in non-cash expense in 2016, followed by the large \$2B mandatory contribution for the GE Pension Plan in 2017 (disclosed in this year's 10-K), as key items that will reduce the pension add-back over the next couple years. While contributions to the GE Pension Plan for 2018, as required by ERISA, are not yet known, we assume a further \$1B, creating a tailwind in our current model in the y/y walk from 2017 to 2018. But we stress this obligation could change if interest and discount rates rise in 2016.

Table 160: GE Pension Plan Expense vs Cash Contributions

In billions of US\$

	'12e	'13e	'14e	'15e	'16e	'17e	'18e
GE pension expense (income)	3.8	4.4	3.6	4.5	3.5	3.5	3.5
of which operating (non-GAAP)	1.7	1.8	1.5	1.7	1.5	1.5	1.5
implied non-operating	2.1	2.6	2.1	2.8	2.0	2.0	2.0
Minimum funding contributions for GE Pension Plan	(0.4)	0.0	0.0	0.0	0.0	(2.1)	(1.0)
Other pension plans expense (income)	0.6	0.6	0.4	0.4	0.3	0.3	0.3
Contributions to other pension plans	(0.7)	(0.7)	(0.7)	(0.5)	(0.9)	(0.7)	(0.7)
Principal retiree benefit plans expense (income)	1.2	0.9	0.7	0.4	0.3	0.3	0.3
Contributions to principal retiree benefit plans	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)
Net pension contribution, add-back / (deduction) in CFOA	3.9	4.8	3.5	4.2	2.7	0.8	1.9

Source: Company reports, and JPMorgan estimates.

The combined GE pension plans were underfunded by \$27.3B at the end of 2015, up slightly from \$25.6B in the prior year. However, according to Moody's, they now attribute 100% of this to GE, whereas prior to the GE Capital split it was 77% as they were under the impression that a portion of the plan related to those assets. It sounds like none of this pension liability was sold as part of the GE Capital divestitures, leaving the entire amount at the Parent. On this basis, the underfunded plan attributed to GE grew from \$19.7B in 2015 to the full \$27.3B in 2015, a nearly \$10B increase in debt-like liabilities, hurting credit metrics. Of this total, the big GE Pension Plan was underfunded, on a GAAP basis, by \$16.9B at the end of 2015 (73% funded). On an ERISA basis, it was approximately 98% funded, as the ERISA prescribed interest rate is calculated using an average interest rate. As a result, the rate is higher than the year-end GAAP discount rate, which lowers pension liabilities for ERISA funding purposes, thereby reducing GE's near-term annual cash funding requirements. But per the 10-K the funding requirements pick up in 2017.

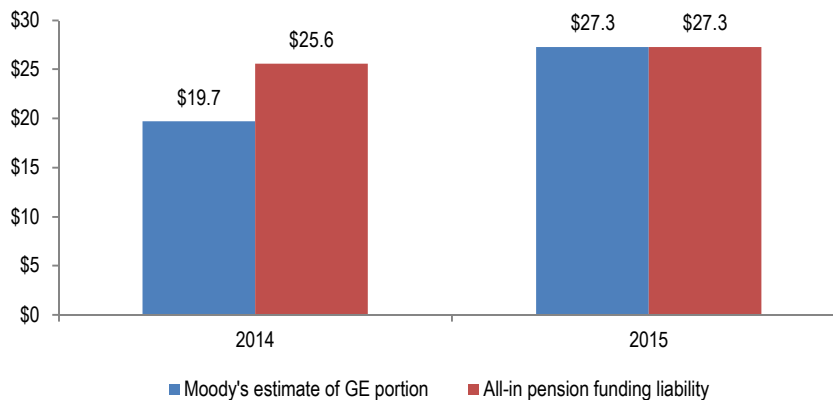
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 199: Moody's Estimate of GE Pension Liability Has Increased Significantly

In billions

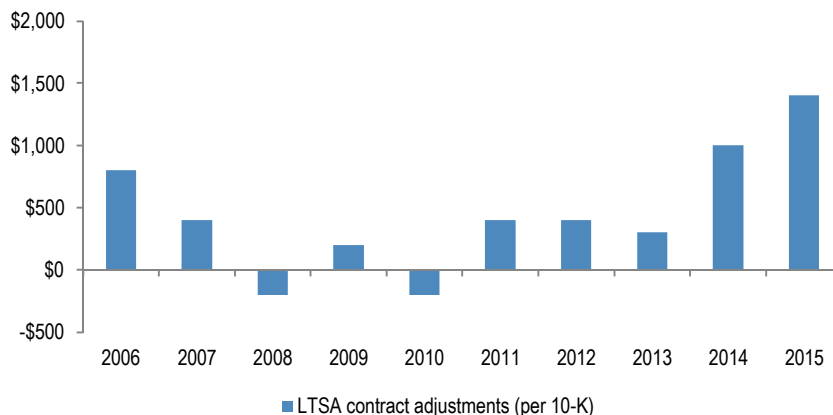


Source: Moody's.

Turning to LTSA contract adjustments, these non-cash gains have increased significantly as a component of earnings over the past few years. As per the 10-K, *“Revenue recognition on long-term product services agreements requires estimates of profits over the multiple-year terms of such agreements, considering factors such as the frequency and extent of future monitoring, maintenance and overhaul events; the amount of personnel, spare parts and other resources required to perform the services; and future billing rate, cost changes and customers' utilization of assets. We routinely review estimates under product services agreements and regularly revise them to adjust for changes in outlook. Revisions may affect a product services agreement's total estimated profitability resulting in an adjustment of earnings; such adjustments increased earnings by \$1.4 billion, \$1.0 billion and \$0.3 billion in 2015, 2014 and 2013, respectively.”* We will discuss this in more detail in a later section, but suffice it to say that these non-cash adjustments have made their way into earnings in a much bigger way, to the detriment of cash conversion.

Figure 200: LTSA Contract Adjustments

In millions



Source: Company reports, and JPMorgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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Lastly, on the more traditional gains versus restructuring dynamic, this is a bit more straightforward. We think the non-cash gains running through earnings get deducted in the “all other operating activities” category, while the non-cash restructuring expense gets added back. The main issue in assessing this impact historically is a lack of disclosure around cash versus non-cash restructuring. For example, severance for associated with headcount reductions will result in a cash outflow, but impairment charges on a factory closure or from a bad contract will not have any cash impact. Unfortunately, we have no way of knowing how much restructuring to bucket as cash or non-cash. Management has told us that 30-50% of the 2016 restructuring booked (\$3.4B) will go out as cash this year, leaving the remainder as an outflow in 2017. This is a headwind to our cash flow forecasts in 2017. When we put all of the above into the blender, we come to a number suggesting some portion of restructuring historically may be non-cash. Admittedly, however, there are likely many other variables that could impact the “all other operating activities” category, and transparency is lacking. Going forward, we forecast less add-backs here than in the recent past for all the reasons discussed above, including less restructuring after this year.

Table 161: Deconstructing “All Other Operating Activities”

In billions of US\$

	'12e	'13e	'14e	'15e	'16e	'17e	'18e
All Other Operating Activities	2.9	1.5	3.1	2.1	(0.7)	(2.7)	(0.1)
Net pension contribution, add-back / (deduction) in CFOA	3.9	4.8	3.5	4.2	2.7	0.8	1.9
Gains	(0.6)	(1.3)	0.1	(1.5)	(3.9)	(0.7)	(0.3)
LTSA adjustments	(0.4)	(0.3)	(1.0)	(1.4)	(1.4)	(1.4)	(1.4)
Implied remainder of “all other operating activities”	0.0	(1.7)	0.5	0.8	1.8	(1.4)	(0.3)
Note: Reported Restructuring	(1.1)	(1.8)	(1.6)	(1.7)	(3.4)	(0.7)	(0.3)

Source: Company reports, and JPMorgan estimates.

Our Outlook for GE Industrial FCF

Next, we provide our outlook for GE Industrial FCF, and how we expect it to look from a quality of earnings standpoint. High level, we expect FCF conversion to remain weak.

Table 162: GE Industrial FCF Expectations, Traditional Approach

In billions of US\$

	'15	'16e	'17e	'18e
GE Ind CFOA	12.1	12.8	11.3	15.3
Cap Dividends	4.3	18.0	11.0	2.5
GE CFOA	16.4	30.8	22.3	17.8
Capex	(3.8)	(4.4)	(4.1)	(3.8)
P&E sales	0.9	0.7	0.8	0.8
FCF	13.5	27.2	19.0	14.8
Note: Industrial FCF	9.2	9.2	8.0	12.3

Source: Company reports, and JPMorgan estimates.

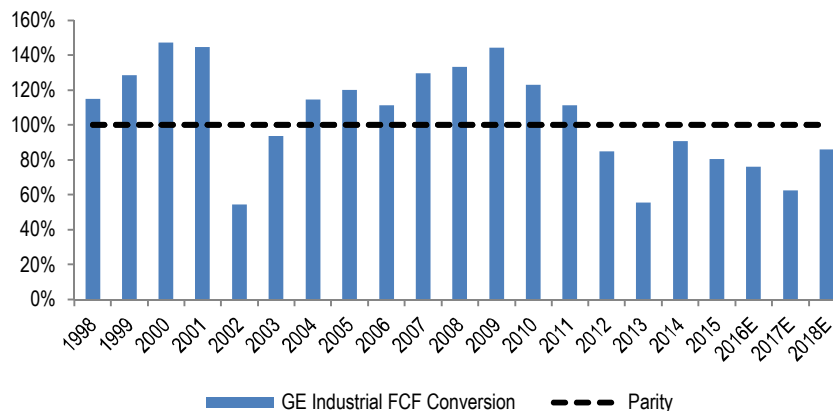
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 201: GE Industrial FCF Conversion, Traditional Approach

GE Industrial FCF divided by Reported GE Industrial Net Income

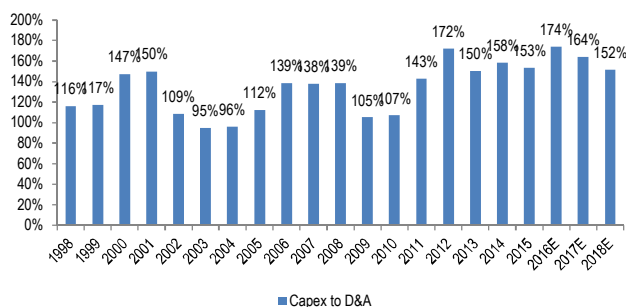


Source: Company reports, and JPMorgan estimates.

We have discussed our outlook for operating activities already, leaving investing activities as the only other consideration here. Here, we address net capex and the cash use in "all other investing activities".

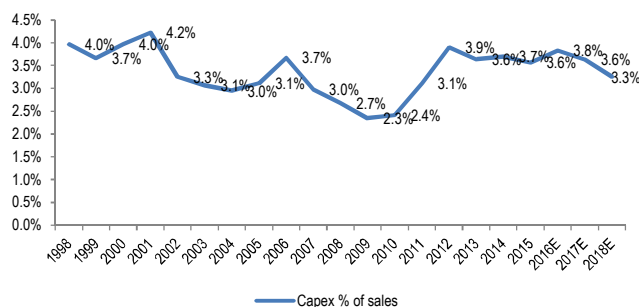
Gross capex: After an expected increase this year related to the Alstom deal, we assume some moderation in reinvestment ratios, with capex to sales moving to 3.2%, versus a long-term average of 3.3%. We think this is reasonable given investments in new aircraft programs should slow somewhat.

Figure 202: Capex to D&A ratio history and forecast



Source: Company reports, and JPMorgan estimates.

Figure 203: Capex to sales ratio history and forecast



Source: Company reports, and JPMorgan estimates.

Dispositions of P&E: We forecast a level consistent with recent amounts.

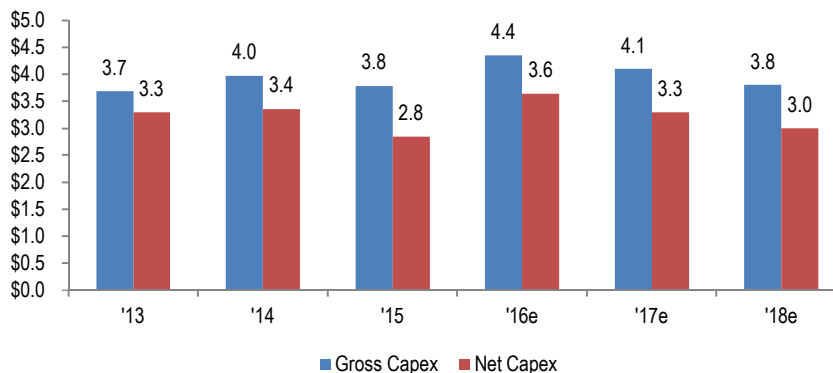
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 204: GE Industrial Gross Capex vs Net P&E

In billions of US\$



Source: Company reports, and JPMorgan estimates.

All other investing activities: Given the consistency and now apparent magnitude of what seems to be a non-discretionary use of cash, we think it ought to be considered in the definition of Industrial FCF. As noted earlier, the activities here are not clear, but the outflow has been consistently large, roughly \$1-2B annually over each of the last few years. GE has said that other investing cash flows relate to things like software, ERPs, licensing, engineering tools, and JVs, including supplier investments and the GE Ventures business. We model a continued outflow of \$1B per year through the forecast period.

This leads us to a modified look at GE Industrial FCF, which is a bit weaker than the traditional approach given the deduction of the outflows from “all other investing activities”. The walk to the JPM modified number is presented in the table. Note that we are not including any GE Capital dividends in our calculation (there is no cash coming from GE Capital).

Table 163: GE Industrial FCF Expectations, Modified Approach

In billions of US\$

	'15	'16e	'17e	'18e
GE Ind CFOA	12.1	12.8	11.3	15.3
<u>Cap Dividends</u>	<u>4.3</u>	<u>18.0</u>	<u>11.0</u>	<u>2.5</u>
GE CFOA	16.4	30.8	22.3	17.8
Capex	(3.8)	(4.4)	(4.1)	(3.8)
<u>P&E sales</u>	<u>0.9</u>	<u>0.7</u>	<u>0.8</u>	<u>0.8</u>
FCF	13.5	27.2	19.0	14.8
<u>All other investing</u>	<u>(1.3)</u>	<u>(1.0)</u>	<u>(1.0)</u>	<u>(1.0)</u>
Modified FCF	12.2	26.2	18.0	13.8
Note: Industrial FCF	9.2	9.2	8.0	12.3
<u>All other investing</u>	<u>(1.3)</u>	<u>(1.0)</u>	<u>(1.0)</u>	<u>(1.0)</u>
JPM modified Industrial FCF	7.9	8.2	7.0	11.3

Source: Company reports, and JPMorgan estimates.

Bottom line is that conversion should remain weaker than historical GE performance, whether one looks at traditional GE Industrial FCF versus net income, or the JPM modified numbers.

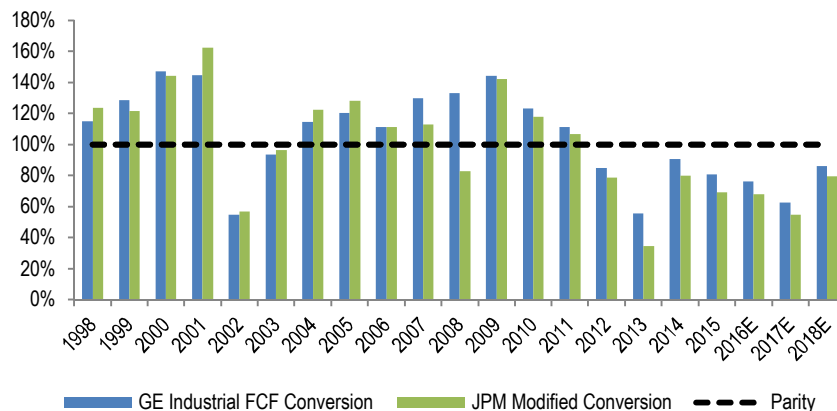
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 205: GE Industrial FCF Conversion, Traditional vs Modified Approach

GE Industrial FCF divided by Reported GE Industrial Net Income

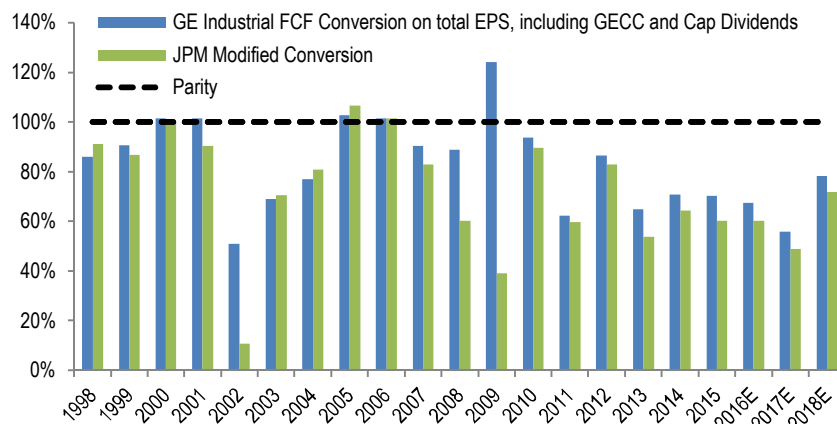


Source: Company reports, and JPMorgan estimates.

The above commentary addressed Industrial FCF conversion on Industrial net income only. We did this to provide a comparable view versus others in our group that do not have financial services operations. Taking this a step further, the picture gets worse on an all-in basis, given that the cash flowing from GECS to the parent is below the reported EPS from GE Capital. Historically, the % of GE Capital net income sent back to the Parent was 40-50%. Going forward, this will be close to zero, despite the fact that 10% of total EPS will still come from the Vertical assets (GECAS, EFS, etc). The JPM modified number takes a similar approach as above, while also deducting cash infusions that GE has made to GECS in '01, '02, and '09, for the historical presentation in the chart. On this basis, conversion also remains below historical results and, of course, well below sector average (~100%).

Figure 206: GE Defined FCF (GE Industrial FCF Plus GECS Dividend), on Total EPS (including GE Capital EPS), Traditional vs Modified Approach

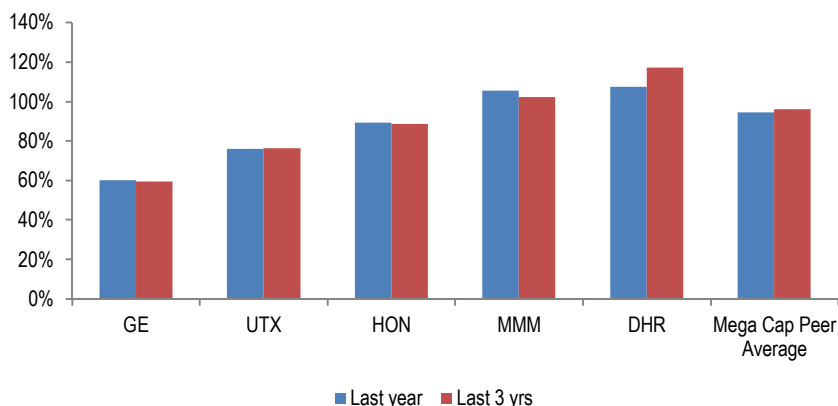
GE Industrial FCF divided by Reported GE Industrial Net Income



Source: Company reports, and JPMorgan estimates. Note: Excludes GECS dividends coming from divestiture proceeds in '15-'18, which are fully committed to buybacks, and already in consensus estimates (i.e., not considered discretionary at this point).

Lastly, it's important to note that we are not singling out GE here, as on a like for like basis (all numbers adjusted to remove cash from other investing activities), the modified FCF conversion last year of 60%, and over the last three years we estimate ~60%, compares to its mega cap peers at ~95%. Relative to the peer set, the only other notable change versus the traditional FCF conversion is at UTX (we presented a similar modified FCF analysis in our initiation report on that company).

Figure 207: GE Cash Conversions Remains Poor vs Mega Cap Peer Group on Modified Definition
FCF Conversion on Modified Definition



Source: Company reports, and JPMorgan estimates.

A Closer Look at FCF Entitlement

As we said earlier, weak quality of earnings (defined here as FCF conversion) is not just a GE problem. Judging from the peer group, however, we think the mix of businesses here (power turbines, oil & gas equipment, aircraft engines, locomotives, etc) lends itself to lower conversion entitlement. The 5-yr average FCF conversion among GE's global infrastructure peer set looks to be around 70-75%, well below 100%. This is likely a function of competitive global equipment markets for these types of products, where most of the expected value in an order comes from the aftermarket services, years after the OE shipment has taken place. As a result, competitors are aggressive upfront, using terms as a weapon.

Table 164: FCF Conversion Among GE's Global Peers

FCF as % of adjusted net income

GE's Global Peers	Segment	2011	2012	2013	2014	2015	5-yr avg	5-yr median	Cumulative
Siemens	Power / Healthcare	78%	77%	107%	84%	94%	88%	84%	87%
Mitsubishi Heavy Industries	Power / Aviation		229%	103%	25%	-28%	82%	64%	61%
National Oilwell Varco	Oil & Gas	82%	1%	115%	69%	81%	70%	81%	67%
Halliburton	Oil & Gas	23%	3%	53%	23%	54%	31%	23%	28%
Schlumberger	Oil & Gas	43%	38%	91%	99%	149%	84%	91%	83%
Rolls Royce	Aviation	64%	52%	65%	17%	18%	43%	52%	42%
MTU Aero Engines	Aviation	66%	37%	36%	17%	23%	36%	36%	34%
Safran	Aviation	83%	56%	60%	59%	66%	65%	60%	63%
United Technologies	Aviation	113%	108%	102%	90%	91%	101%	102%	100%
Philips	Healthcare	-21%	159%	13%	47%	29%	45%	29%	51%
Caterpillar (mfg ops only)	Transportation	123%	18%	212%	194%	166%	143%	166%	123%
Average of peers		65%	71%	87%	66%	68%	72%	72%	67%

Source: Company reports, and JPMorgan estimates

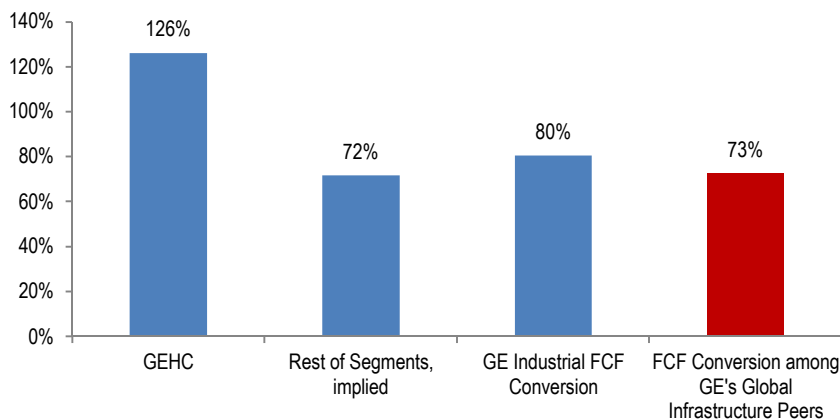
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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GE recently hosted an investor meeting on its Healthcare segment, showing FCF conversion of 126% at the segment. Assuming this is the same non-GAAP definition that GE uses for its Industrial ops where FCF conversion was 80% last year, we calculate an implied 72% conversion for the rest of the portfolio, in line with the 70-75% average from above.

Figure 208: GE Industrial FCF Conversion by Segment



Source: Company reports, and JPMorgan estimates.

Alstom Cash dynamics weak so far

Recent cash dynamics for the acquired Alstom businesses have been weak with ~\$3B in total cash outflow since the quarter ending Mar-14. Some of the weak cash flow can be explained by customer uncertainty over the past year regarding the closing of the deal with orders down significantly (FY1H16 organic was down ~19% y/y). In terms of opportunities for improvement here, Alstom has continued to invest in certain programs that GE could shut off immediately but other than that we believe given the global nature of the business, including participation in long-term EPC projects (for example the Medupi power projects in South Africa), cash dynamics will remain weak until GE streamlines operations here with potential exits from loss-making projects.

Table 165: Alstom Cash Outlay

	Euro	USD
Cash Usage FY1H15	1,000	1,350
Cash Usage FY2H15	(800)	(950)
Cash Usage FY1H16	1,000	1,100
Cash Usage Oct'15	600	650
Cash Usage Nov-15 to Mar-16		900
Total Outlay (Mar-14 to Mar-16)		3,000

Source: Company reports and J.P. Morgan estimates. FY ending March -2015

Looking at the pro-forma 2014 Transport FCF, FCF from discops (or Alstom's assets divested to GE) was a negative ~\$250-300mm.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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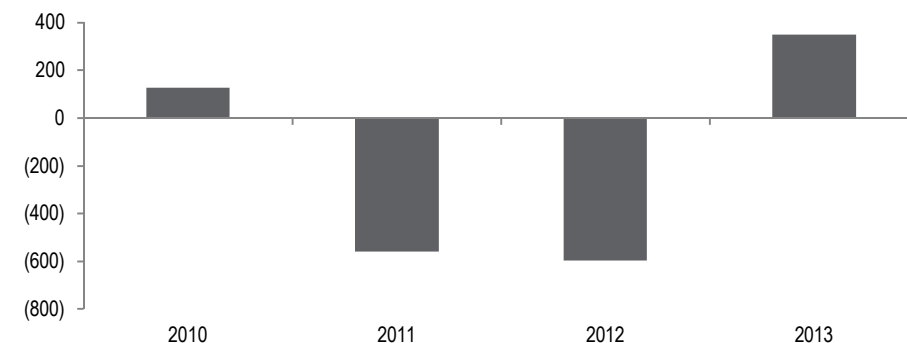
Table 166: Alstom - GE Assets 2014 FCF

2014 FCF Total	(190)
OCF Continuing Ops	206
Capex Continuing Ops	(120)
FCF Discops	(276)

Source: Company reports and J.P. Morgan estimates.

Prior to that, Alstom overall cash performance has been subdued with negative FCF generation in 2011 and 2012 and positive in 2013, but with a conversion of <50%. Management sees conversion touching the GE level over the longer-term, starting with breakeven levels in 2016.

Figure 209: Overall Alstom Historical FCF



Source: Company reports and J.P. Morgan estimates.

Expected Sources and Uses of Cash

Putting it all together, we summarize in the table expected sources of cash (GE CFOA, including the expected Capital dividends, the biggest piece here), as well as its expected uses over the next few years.

At a high level we see (1) Capital dividends (\$31-32B) fully utilized to buyback stock (already in consensus models), plus some ongoing buyback assumed to prevent creep (\$2B/yr) funded by divestiture proceeds (\$3.5B) and Industrial FCF over and above the dividend (\$5B, most of which comes in '18 based on our forecasts); (2) JPM Modified Industrial FCF estimates (\$26.5B) mostly going toward paying the GE common stock dividend (\$24.5B); and (3) additional leverage of \$20B (1X '18 EBITDA), plus ~\$5B in cash on hand from the balance sheet, considered as the optionality potential to be used for M&A or additional buyback.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 167: Expected Sources and Uses of Cash, 2016-2018E

In billions of US\$

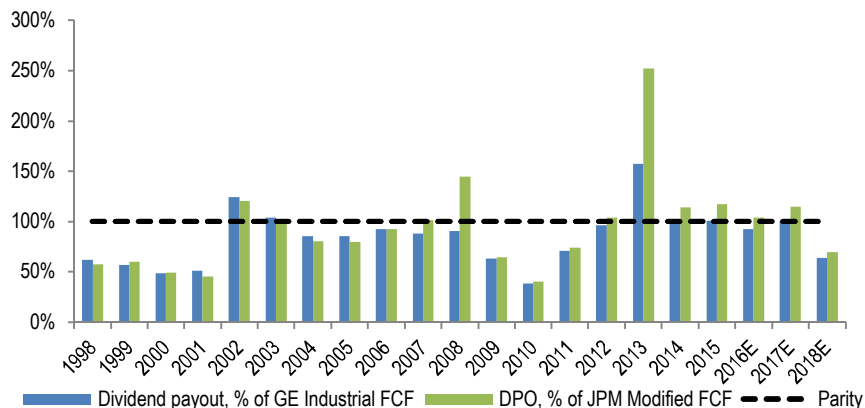
	'16-'18
<u>Sources of cash</u>	
Parent cash 12/31/15	10.4
Industrial CFOA, 2016E	12.8
Industrial CFOA, 2017E	11.3
Industrial CFOA, 2018E	15.3
Divestiture Proceeds (2016-2018E)	3.5
P&E Dispositions (2016-2018E)	2.3
GECS dividends (2016-2018)	31.5
<u>Leverage Potential</u>	<u>20.0</u>
Total sources	107.1
<u>Uses of cash</u>	
Dividend 2016E	(8.5)
Dividend 2017E	(8.1)
Dividend 2018E	(7.9)
Capex 2016E	(4.4)
Capex 2017E	(4.1)
Capex 2018E	(3.8)
Other Investing Cash Flow (2016-2018E)	(3.0)
Parent cash required on balance sheet	(5.0)
Buyback (Including GECS dividends, 2016-2018E)	(37.5)
<u>Optionality (M&A or additional buyback)</u>	<u>(24.9)</u>
Total uses	(107.1)

Source: Company reports, and JPMorgan estimates.

Here, we provide some historical context on dividend payout versus GE Industrial FCF. Netting the Industrial CFOA, P&E dispositions, capex, and other investing cash flows together (the JPM Modified FCF estimates), and comparing to the GE dividend to shareholders, we show that the company has been paying out all of its Industrial FCF to fund the common stock dividend since 2012. Based on our projections, the situation will improve in 2018, driven by a combination of higher Industrial FCF and less dividends to pay (share count will be down due to buybacks). This is increasingly important as a consideration given that beyond '18 the Capital dividends will go to zero, leaving Industrial FCF as the only source of deployable cash (aside from higher leverage, discussed next).

Figure 210: Dividend Payout Ratio

GE Common Stock Dividends divided by GE Industrial FCF



Source: Company reports, and JPMorgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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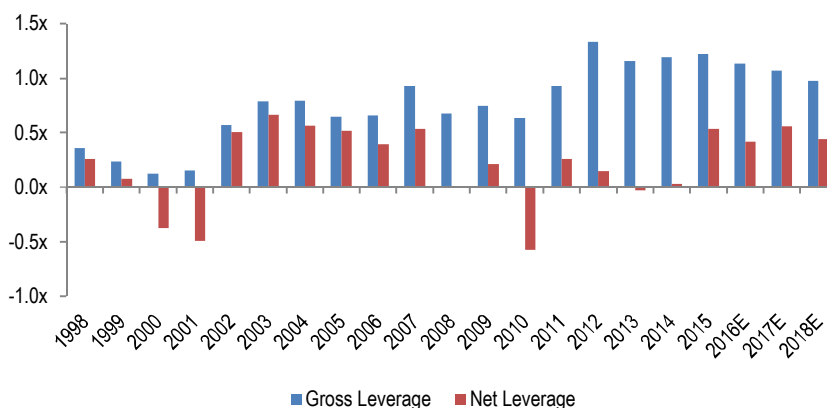
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Balance Sheet Optionality

Leverage at GE Industrial at 0.5X net debt to EBITDA (1.2X on a gross basis) looks to be lower than the group average at 1.0-1.5X net leverage, suggesting opportunity to use the balance sheet more aggressively. Indeed, management has talked to \$20B of potential through 2018, which would add about a turn to the current leverage profile and put them more in line with the group.

Figure 211: Financial Leverage at GE Industrial below the Group Average

Gross and net debt to EBITDA



Source: Company reports, and JPMorgan estimates.

However, we don't think GE is as cash rich as it appears, given a large liability on the pension plans. Moody's adds this \$27B in pension underfunding to the "unadjusted debt" of \$18.5B at year end (this is actually also an adjusted number since it removes the \$85B of debt that GE has guaranteed for GE Capital). Putting this into the calculation of debt + debt-like liabilities, and adding back the pre-tax pension expense to come to an EBITDAP, we find that financial leverage increases to 2.2X on a gross basis and 1.7X on a net basis, suggesting less flexibility than appears in the construct of the current credit rating profile. Moody's own adjusted calculation of debt to EBITDA is even higher, at 2.4X as they include operating leases as well in their analysis.

Table 168: Adjusted Leverage

In billions

	2015
Gross Debt	\$18.5
Pension	27.3
Adj. Gross Debt	\$45.7
Adj. Gross Leverage	2.2X
Adj. Net Debt	\$35.3
Adj. Net Leverage	1.7X

Source: Company reports, and JPMorgan estimates.

Additionally, we note that after \$8-8.5B in dividends and required share repurchases of \$2B each year to offset options dilution, there is no FCF available to shareholders.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 169: Illustrative Look at GE Industrial FCF Available to Shareholders

In billions

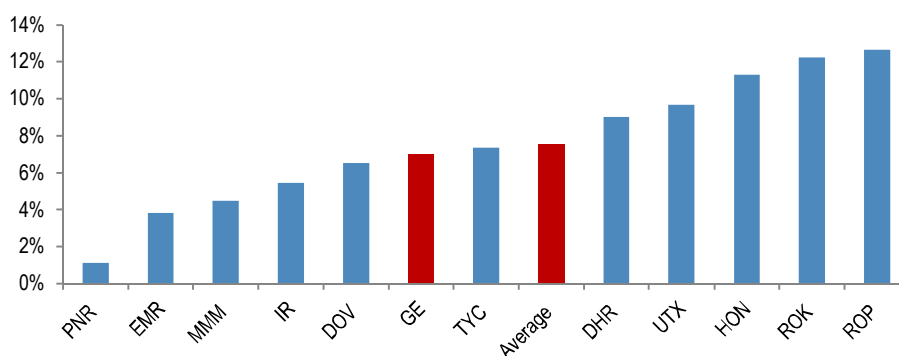
	2015	2016F	2017F	2018F
Industrial FCF (x-GE Capital dividends), traditional definition	\$9.2	\$9.2	\$8.0	\$12.3
<u>GE stock dividends</u>	<u>(9.3)</u>	<u>(8.5)</u>	<u>(8.1)</u>	<u>(7.9)</u>
Industrial FCF after dividends	(\$0.1)	\$0.7	(\$0.1)	\$4.4
<u>GE share repurchase to offset options dilution</u>	<u>(1.8)</u>	<u>(1.8)</u>	<u>(1.8)</u>	<u>(1.8)</u>
Industrial FCF after dividends and share repurchases	(\$1.8)	(\$1.1)	(\$1.8)	\$2.7

Source: Company reports, and JPMorgan estimates.

This brings us to balance sheet optionality. There is ~\$25B of potential spend we think (\$20B from leverage, and ~\$5B from existing cash on the balance sheet), with no help from FCF on our current outlook. And we see this as slightly below average versus the group (i.e., not differentiated on this basis).

Figure 212: GE Balance Sheet Optionality (Upside EPS Potential) versus Group

% upside to EPS from capital deployment



Source: Company reports, and JPMorgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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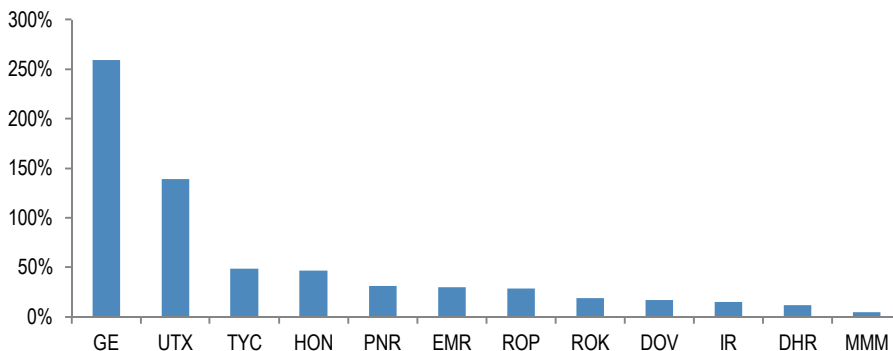
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Debate #2: Is GE a “Safety” Stock?

While we are not imminently heading into a recession, we believe its necessary to evaluate the “safety” aspect of GE’s portfolio which has been a key debate in the past and key thesis of the bull case. We don’t envision a broad based recession any time soon but do see selective end markets that are already in the midst of a downturn (like Oil & Gas), or under significant pressure (Transportation – Industrial/rails), or could see possible headwinds (like Wind Yieldco issues and possible Aviation pressure from EMs in 2017/2018). All these pressure are likely hitting/ (to hit) at different periods during this cycle unlike 08/09 where all end markets saw weakness.

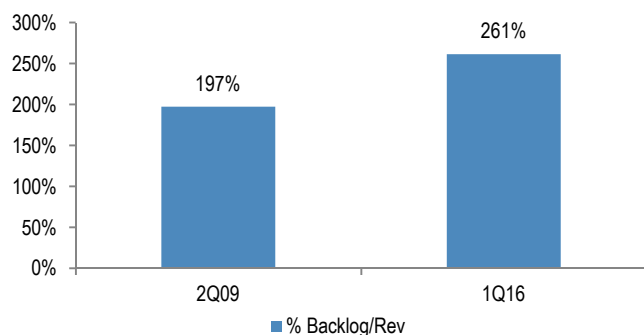
We start by looking at GE’s ‘reported’ backlog vs peers, which unarguably is the highest vs industrial peers. This is a key part of the Bull thesis as it implies GE likely holds up well in a downturn scenario, with above average visibility given a large backlog of unfilled orders, driven by the Aviation businesses and Power.

Figure 213: GE Reported Backlog vs Peers



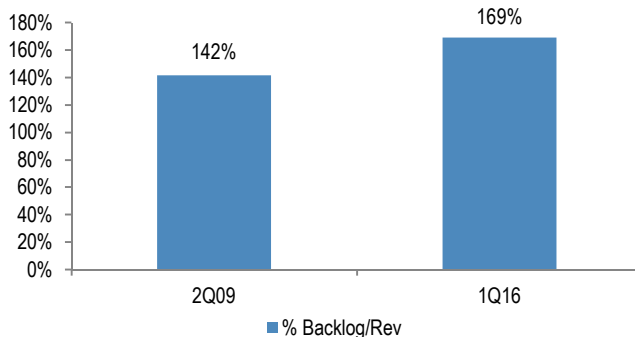
Source: Company reports and J.P. Morgan estimates.

Figure 214: GE Backlog/Revenue



Source: Company reports and J.P. Morgan estimates.

Figure 215: GE Backlog/Revenue (ex-Aviation)



Source: Company reports and J.P. Morgan estimates.

However, we don’t see the above analysis as comparable, given companies report backlog differently, particularly GE and UTX, who include long term service contracts in their backlog. To look at ‘true visibility’ vs peers, we try to arrive at a comparable backlog/sales number for GE and UTX using the filings and conversations with management. While UTX reports their NTM (next twelve month) revenue backlog in their 10-Ks, for GE we try and estimate this by using historical

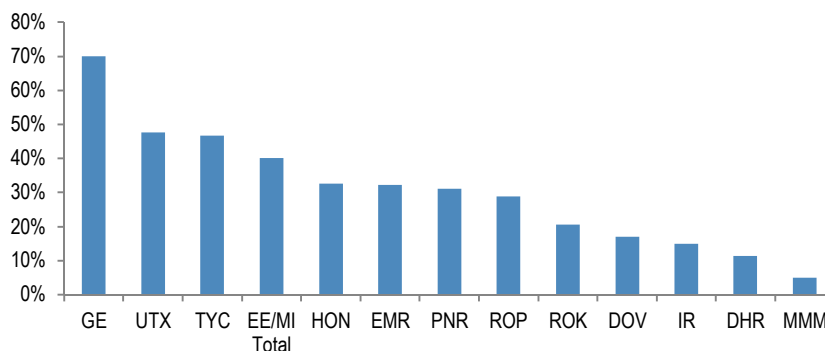
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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(pre-08) convention for their services backlog (in '09 GE changed definition of services backlog from prior accounting for just next 12 months of services backlog, to now the expected life of contract sales for product services) which would imply ~10-15% of the backlog is scheduled to ship in the following year. In addition, GE also noted in their filings pre-09 the amount of equipment backlog scheduled for shipments in the following year, and this metric averaged in the ~55-60% range prior cycle. Using this convention, which we see as true visibility, we see the ~200% of reported backlog/revenue falling to ~65-75% - still solid and above the peer average.

Figure 216: NTM Backlog/Revenue



Source: Company reports and J.P. Morgan estimates.

A look at 08/09 revenue and profit growth

The backlog dynamics at GE are undoubtedly favorable, but are hard pressed to see how advantageous it is in the event of a rescission. Bulls point to this metric often, but looking at revenue growth during the last downturn at GE, we see the strong backlog helping somewhat, but don't really see it's a material differentiator given GE's revenue growth was still down materially – down ~11% from peak to trough, compared to the group average of down ~15%.

Table 170: Y/Y Revenue Growth in 2008/2009

Revenue	2008	2009	2010	2009 Y/Y	2010 Y/Y	Peak to Trough
Power & Water	28537	27389	24779	-4%	-10%	-13%
Oil & Gas	9886	9683	9433	-2%	-3%	-5%
Energy Connection	6427	5223	5161	-19%	-1%	-20%
Aviation	19239	18728	17619	-3%	-6%	-8%
Healthcare	17392	16015	16897	-8%	6%	-8%
Transportation	5016	3827	3370	-24%	-12%	-33%
Appliances & Lighting	9304	7816	7957	-16%	2%	-16%
Sum	95801	88681	85216	-7.4%	-3.9%	-11.0%
Group Average						-15.0%

Source: Company reports and J.P. Morgan estimates.

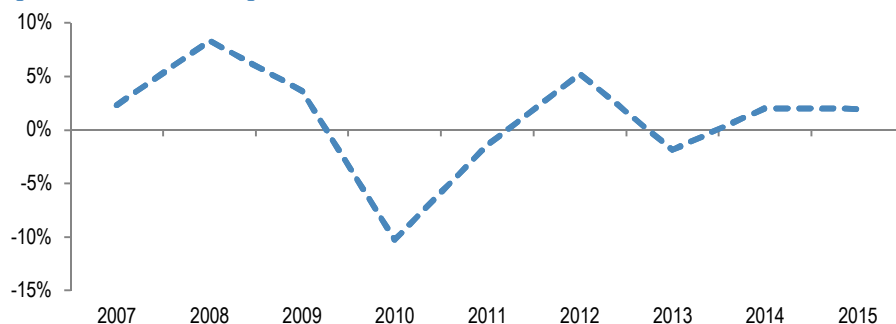
Looking through the cycle from just before the start of the downturn, GE's revenue growth vs group has outperformed on average by ~1% from 2007-2015, which is solid.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 217: GE Relative Organic Growth



Source: Company reports and J.P. Morgan estimates.

The key differentiator last cycle was in profits and GE Industrial's profit growth during the last downturn and notice that GE's profit held up significantly better than peers, with nearly flattish growth vs down ~20% at peers. This is solid on a headline basis and was driven by company specific and industry specific drivers at that point and bulls seem to point to these headline metrics when judging GE in the event of another potential downturn. We think this argument is flawed and discuss in the sections below on what's different and what's not this time vs 08/09 and show how GE is not necessarily immune with segment and industry dynamics similar, in not materially worse vs peers.

Table 171: Y/Y Profit Growth in 2008/2009

	2008	2009	2010	2009 Y/Y	2010 Y/Y	Peak to Trough
Power & Water	4563	5592	5804	23%	4%	NM
Oil & Gas	1555	1440	1406	-7%	-2%	-10%
Energy Connection	478	144	156	-70%	8%	-70%
Aviation	3684	3923	3304	6%	-16%	-16%
Healthcare	2851	2420	2741	-15%	13%	-15%
Transportation	962	473	315	-51%	-33%	-67%
Appliances & Lighting	287	360	404	25%	12%	NM
Sum	14380	14352	14130	-0.2%	-1.5%	-2%
Group Average						-21%

Source: Company reports and J.P. Morgan estimates.

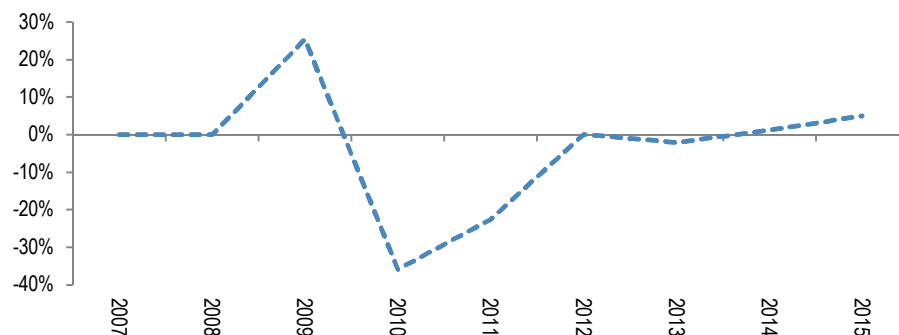
Looking at profit growth through the cycle over the same period, shows GE has actually underperformed materially through the course of the cycle (~300bps on average) despite outperforming significantly on 08/09.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 218: GE Relative Profit Growth



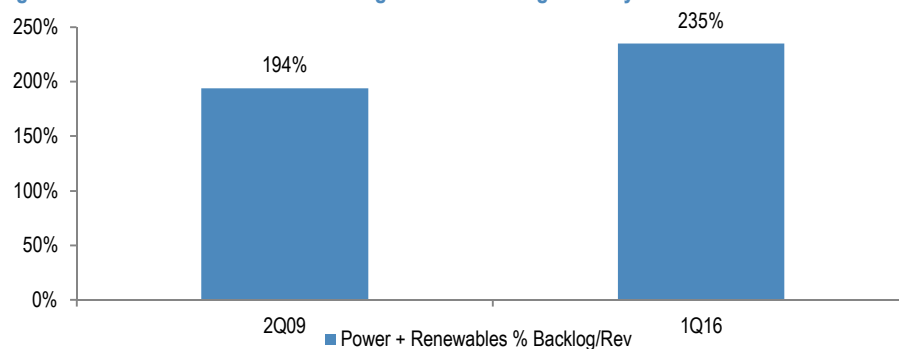
Source: Company reports and J.P. Morgan estimates.

We walk through some of the key segment specific dynamics below:

Power (~30% of industrial profits inc Alstom Power)

Starting with revenue dynamics, vs 08/09 we believe standing backlog as a % of revenue is a decent indicator of stability of revenue profile in the near to mid-term and we see this metric as relatively stable (or even slightly better) vs early 09 where backlog was ~200% of annual revenue. What's notable here though is the difference between Equipment and services backlog/sales with Equipment backlog/revenue down vs 2Q09 levels while services up.

Figure 219: Power + Renewables Backlog/Revenue Not Significantly Different



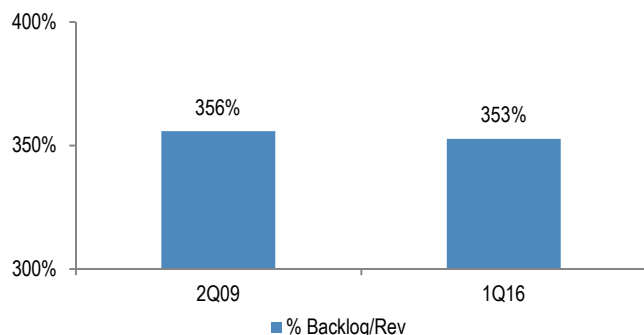
Source: J.P. Morgan estimates, Company data.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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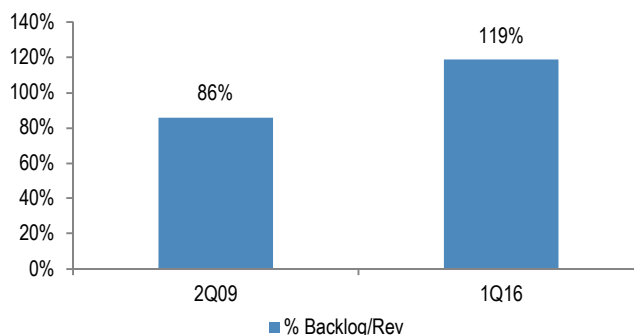
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Figure 220: Power + Renewables Services Backlog/Revenue



Source: J.P. Morgan estimates, Company data.

Figure 221: Power + Renewables Equipment Backlog/Revenue



Source: J.P. Morgan estimates, Company data.

In addition, we also try to look at backlog visibility here and see this as having deteriorated vs 09 levels. In 2Q09 equipment backlog was \$14 B, with services backlog of \$39 B and assuming a ~15yrs CSA we arrive at a total near-term revenue visibility of ~\$18B (Equipment + CSA/year) or ~65% of 2009 revenue. Looking at the current backlog, equipment is down to ~\$10B (ex-Alstom) and services are up to ~\$55B which implies near-term visibility of ~15.5B, or ~55% of revenue. This is below prior recession levels and in the event of a recession this time around, revenue declines could likely be higher than prior.

Revenues were down ~15% peak to trough in Power & Water from 08-10 and in a recession scenario this time around we would not expect revenue dynamics to be materially different (ex-pricing benefits), though we do note there are other macro related dynamics such as the Wind PTC (discussed above), already weak Oil & Gas (which impacts the Distributed Power base) markets and weaker EM demand. However, what's notable last cycle was that despite revenue declines in 2009/2010, margin were solid and increased ~750bps over this period, driving ~35% profit growth on a ~15% revenue decline

Table 172: Power & Water Revenue and Profit Growth

Power & Water	2008	2009	2010	2009 Y/Y	2010 Y/Y	Peak to Trough
Revenue	28537	27389	24779	-4%	-10%	-13%
Profit	4563	5592	5804	23%	4%	NM
Margin	16.0%	20.4%	23.4%	440bps	300bps	

Source: Company reports and J.P. Morgan estimates.

This we believe was largely driven by solid order pricing in the segment (called 'Energy' back then which also included Energy Connection) which was up in the ~5% y/y growth range for several quarters prior driven by solid demand and tight capacity across all product lines including Gas Turbines, Wind and Aero, and flew through the revenue and bottom line during the downturn.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 173: Y/Y Order Pricing in Energy (Majorly P&W)

Energy	Y/Y Order Pricing
1Q08	4.0%
2Q08	5.0%
3Q08	6.0%
4Q08	5.5%
1Q09	3.7%
2Q09	2.9%
3Q09	4.0%

Source: Company reports and J.P. Morgan estimates.

However, what's notable and different this time around is, while, as discussed above, revenues could face the same amount of pressure we believe there will be little benefit from pricing which has been flattish over the last several quarters and profit declines should likely follow revenue declines in a recession scenario. Indeed, looking at orders pricing in the legacy turbines (E and F), trends have been flattish on average since 1Q14 with H turbine currently highly positive in the double digits (~20% of order base currently in 2015, estimated ~20% of shipment base in 2016).

Table 174: Y/Y Order Pricing in Power & Water (1Q16 is just Power and excludes Renewables)

Power & Water	Y/Y Order Pricing Legacy	Y/Y Order Pricing H- Frame (JPMe)
1Q14	-0.4%	
2Q14	0.0%	
3Q14	1.3%	
4Q14	-0.7%	
1Q15	-0.5%	
2Q15	0.1%	
3Q15	-0.5%	+10.5%
4Q15	-0.5%	+19.2%
1Q16	-0.5%	+9.9%

Source: Company reports and J.P. Morgan estimates. For 3Q and 4Q15, Legacy Pricing Assumptions are JPMe

We quickly walk through sub-segment segment dynamics, on what's different and what's same this cycle vs last.

Services – AGPs/Transactional Services: This is a key support in a recession and a differentiator. Looking at core services growth (ex-AGPs) in 2009/2010 the worst 4 consecutive quarters saw declines of just low-single digits, implying the revenue stream here in this part of the business should hold up relatively well in a recession. On AGPs, the backlog is building and we don't see upgrades here declining significantly in the near-term, though given the transactional and book – and –ship type of nature of majority of the AGP upgrades, there could be potential for a sharp cut back in spending here. Including Alstom, AGPs now contribute ~10% to overall Power services revenue and ~6% to overall segment revenue, and a 25% revenue decline for AGPs in a recession along with mid single digit declines in the core service business would result in a mid- to-high single digit decline for the Per services overall, much better off than other segments.

Alstom – Synergy benefits offset core ops: Here we see potential for significantly decline in core operating profits, but see this being significantly offset by synergies from the deal, which are already being executed on aggressively by management.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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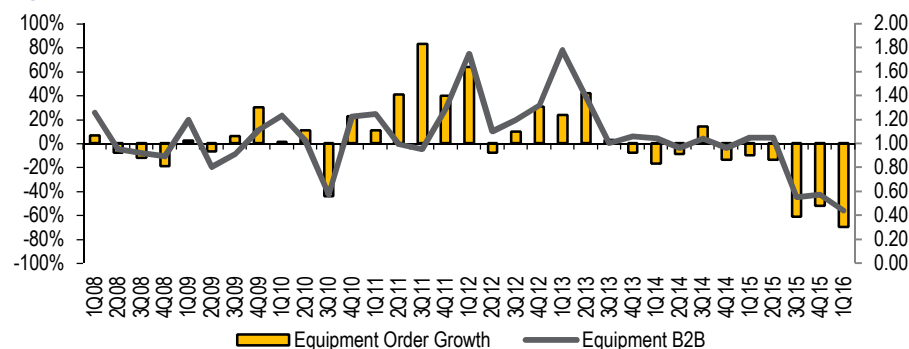
GTs – strong backlog, US cycle: Finally, on the equipment side, this was never a key contributor to absolute profits and with ~\$200 in estimates profits, we see this going to \$100mm in a worst case driven primarily by distributed power as the strong backlog for GTs combined with a strong US cycle near-term should drive a relative stable revenue profile.

Net- net, there could also be benefits from commodity and restructuring actions, but overall we envision profit growth that is much lower than the ~25% growth seen in 08/09, which was driven primarily by price and a relatively mature turbine cycle.

Oil & Gas (~12% of industrial profits) – already in recession

This is more straightforward and another segment which we believe should see weaker profit growth than the last recession driven by order growth dynamics – something we are already seeing in the current environment. Compared to 2008/2009 levels Equipment order growth has been much worse down as much as ~70% in 1Q16 and compares to the worst order decline quarter of down just 19% in 4Q08 (down 10% for the worst 4 quarter period). Looking specifically at Equipment, 1Q16 B2B is the lowest ever for this segment showing steep revenue decline on the Equipment side are on the come for this segment. 1Q16 Equipment B2B of ~0.44x compared to ~0.8x in 2Q09.

Figure 222: Oil & Gas Equipment B2B and Order Growth



Source: Company reports and J.P. Morgan estimates.

Given the above dynamics, coupled with the macro themes we discussed above, we see revenue declines that are likely much greater than those seen during the prior downturn. On profits, while management has done a commendable job of arresting the margin decline so far in 2015 vs peers, we don't see this holding up in 2016 as the weak order pricing and subsequent volume decrements start flowing through the bottom line. While GE should still incur higher y/y savings from restructuring activities in 2016 it gets offset from higher volume and pricing declines than in 2015.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 175: Oil & Gas Segment Margin Bridge (Prior to 2014 as per old segmentation)

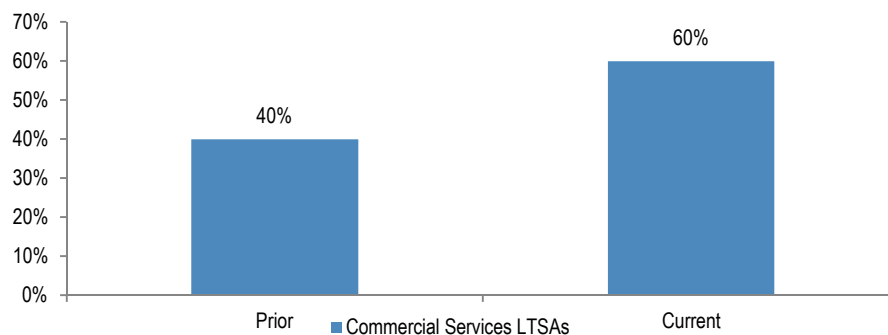
	2012	2013	2014	2015	2016E	2017E	2018E
Sales Start	13,608	15,241	17,341	19,085	16,450	13,149	11,884
Core	1,633	1,034	1,144	(885)	(2,808)	(1,265)	36
Price	0	200	100	0	(500)	(250)	0
Volume	1,633	834	1,044	(885)	(2,308)	(1,015)	36
Acquisitions	700	700	700	(150)	(90)		
Forex	(700)		(100)	(1,600)	(403)	0	0
Other			0				
Sales End	15,241	16,975	19,085	16,450	13,149	11,884	11,920
OP Start	1,660	1,924	2,357	2,758	2,427	1,512	1,194
Core	194	295	228	(129)	(1,431)	(568)	7
Price	0	200	100	0	(500)	(250)	0
Volume	194	95	128	(129)	(931)	(318)	7
Mix + Productivity	100	(100)	100	50	600	250	50
Inflation				50			
Acquisitions	70	60	98	(23)	(14)	0	0
Forex	(100)		(25)	(280)	(71)	0	0
Other							
OP End	1,924	2,178	2,758	2,427	1,512	1,194	1,252
Margin	12.6%	12.8%	14.5%	14.8%	11.5%	10.1%	10.5%
Core Margin	11.9%	11.3%	12.3%	14.5%	40.3%	31.3%	20.1%

Source: Company Reports, J.P. Morgan Estimates. *2014 onwards reported as mix, prior to that reported as productivity restructuring saves estimated by JPM

Aviation (~32% of industrial profits) – backlog solid but LEAP ramp should impact profits more

Dynamics this time around are likely to be different vs the prior recession, particularly on the profitability side. On revenues, we don't see much difference vs spares with the equipment (down 10% for the worst 4 quarters) revenues likely impacted similarly as last downturn. On the services side however, we would expect to see a marginally better performance this cycle (down 6% for the worst 4 quarters prior) given airlines are tied more to LTSAs or Power by the hour contracts (now 60% of GE contracts are LTSA's overall vs ~40% prior).

Figure 223: Commercial LTSAs as % of Services Contracts



Source: Company reports and J.P. Morgan estimates.

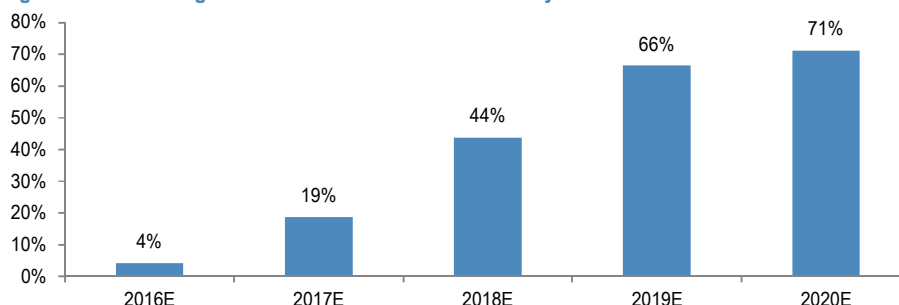
On the profit side, we could likely see an exaggerated negative impact given the initial LEAP ramp costs and negative OE margins for its initial shipments over the next 12-18 months. Management anticipates ~100 LEAP engine shipments in 2016 which we see having a negative profit of impact of ~200-300mm. Note, this kind of a new engine ramp was absent during the 08/09 downturn.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
12 May 2016

J.P.Morgan

Figure 224: LEAP to go from ~5% to ~45% of mix in first 3 years



Source: Company reports and J.P. Morgan estimates.

Table 176: Aviation Segment Margin Bridge (Base Case)

	2013	2014	2015	2016E	2017E	2018E
Sales Start	19,994	21,911	23,990	24,660	26,263	27,445
Core	1,417	1,229	670	1,603	1,182	1,235
Price	600	800	540	100	0	0
Volume	817	429	130	1,503	1,182	1,235
Acquisitions	500	750				
Forex			0	0	0	0
Other		100	0	0	0	0
Sales End	21,911	23,990	24,660	26,263	27,445	28,680
OP Start	3,747	4,345	4,973	5,507	5,857	6,065
Core	698	878	509	700	309	293
Price	600	800	540	100	0	0
Volume	98	78	(31)	600	309	293
Mix + Productivity	(100)	(200)	300	(100)	(100)	(250)
Inflation	(200)	(300)	(175)	(50)	0	0
Acquisitions	100	150			0	0
Forex						
Other (launch costs)	100	100	(100)	(200)	0	0
OP End	4,345	4,973	5,507	5,857	6,065	6,109
Margin	19.8%	20.7%	22.3%	22.3%	22.1%	21.3%
Core Incremental	12.0%	18.2%	-23.8%	39.9%	26.1%	23.8%

Source: Company Reports, J.P. Morgan Estimates. *2014 onwards reported as mix, prior to that reported as productivity ex-restructuring saves estimated by JPM

Other businesses (~25% of profits)

Healthcare, Renewables, Energy Connection, Transportation and Lighting is expected to represent ~1/4th of GE Industrial segment profits post the Alstom acquisition/Appliance divestiture. For Healthcare, Energy Connection and Transportation, we see magnitude of revenue and profit declines similar to the last recession given portfolio and subsequent end market headwinds along with order pricing dynamics are not that different compared to last cycle. For Renewables, while there is less accurate disclosure on profits given it was part of the Power & water segments, revenues were down ~25% on average from 4Q09-3Q10 and we see potential for a similar magnitude of declines in a recession this time around (although this could be higher given declines driven by already ongoing gradual US PTC roll off). There was little disclosure on profit trends at the Lighting segment during the last downturn so potential trends here are a TBD particularly due to LED penetration dynamics here. Growth has mixed in the overall Lighting segment recently – an average of ~1% y/y over the last 4 quarters with LEDs up ~75% y/y (now ~40% of Lighting portfolio) and Traditional down ~15% y/y. This is a largely book and ship type business with exposure to industrial and construction markets and we believe both revenues and profits should likely be pressured if not down significantly.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Value Gap: Overall pricing dynamics significantly weaker than last cycle

As highlighted in the Power section, pricing was a key driver of better than peers profit decline in 08/09 with ~\$1.6-1.8B in profit benefits alone, apart from raw material deflation with contributed ~\$300-400mm. While we believe GE could see a similar degree of commodity benefits (likely less given certain commodities are already depressed), we don't see a repeat of the pricing benefits given significantly weaker order pricing trends compared to 08/09.

Table 177: Y/Y Order Pricing in Energy last downturn (Majority P&W)

Energy	Y/Y Order Pricing
1Q08	4.0%
2Q08	5.0%
3Q08	6.0%
4Q08	5.5%
1Q09	3.7%
2Q09	2.9%
3Q09	4.0%

Source: Company reports and J.P. Morgan estimates.

Table 178: Y/Y Order Pricing Across Segments in recent quarters

	Power*	Renewables	Oil & Gas	Energy Connection	Aviation	Healthcare	Transportation
1Q14	-0.4%		1.4%	-0.4%	2.6%	-1.5%	0.0%
2Q14	0.0%		0.0%	-0.2%	2.0%	-1.5%	0.4%
3Q14	1.3%		0.1%	0.1%	1.4%	-1.6%	0.3%
4Q14	-0.7%		-0.2%	0.0%	1.2%	-2.0%	0.2%
1Q15	-0.5%		-1.4%	0.4%	1.3%	-1.7%	0.2%
2Q15	0.1%		-1.2%	-0.4%	2.4%	-1.5%	0.1%
3Q15	1.5%		-1.7%	-0.2%	1.5%	-1.9%	0.1%
4Q15	3.8%	1.9%	-1.6%	-0.4%	1.2%	-1.6%	0.0%
1Q16	2.0%	-0.2%	-1.2%	-0.3%	0.4%	-1.5%	0.0%

Source: Company reports and J.P. Morgan estimates. *Prior to 3Q15 pricing includes renewables impact

Net-net GE likely fares much worse in a recession vs 08/09

Net-net keeping the above dynamics in mind we think GE stands to fare much worse in a recession this time around compared to 08/09/10 with ~75% of the portfolio worse than the prior recession with the remaining likely to see similar declines. One could argue that some businesses have already started to see declines (like Oil & Gas down ~5-10% in 2015, and expected to be down ~15% in 2016) and some likely next year (Transportation - due to weak industrial activity) but the debate is more around the individual safety nature of these portfolios in any given end market downturn, and we don't see any offsets this time around.

Table 179: Y/Y Profit Growth in 09/10

	% of portfolio (profits)	2009	2010	2016/2017 Recession?
Power & Water	30%	23%	4%	Significantly Less Growth
Oil & Gas	13%	-7%	-2%	Worse
Energy Connection	2%	-70%	8%	Similar
Aviation	30%	6%	-16%	Worse due to LEAP dynamics
Healthcare	16%	-15%	13%	Similar
Transportation	7%	-51%	-33%	Similar
Appliances & Lighting	4%	25%	12%	Down significantly
Sum	100%	-0.2%	-1.5%	Worse

Source: Company reports and J.P. Morgan estimates.

In a downside recession scenario we currently model ~25% declines in group profits and see GE falling only slightly better based on the moving parts discussed in the above section.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 180: Y/Y Profit Growth in Near-term recession

	% of profits (2016E)	Profit Decline in Recession	Contribution
Power (inc. Alstom)	29%	-2%	0%
Renewables	4%	-25%	-1%
Oil & Gas	8%	-23%	-2%
Energy Connection	2%	-32%	-1%
Aviation	32%	-21%	-7%
Healthcare	17%	-15%	-3%
Transportation	6%	-67%	-4%
Appliances & Lighting	2%	-25%	-1%
Total			-18%
Group Average (JPMe)			-25%

Source: Company reports and J.P. Morgan estimates.

GECS Vertical Assets

Looking at GECS, we believe the current vertical assets portfolio is undoubtedly as less risk compared to the overall portfolio back in 08/09. Earnings at GECS overall fell ~93% from 07 levels by 09 and had never recovered back to the 07 peak.

Table 181: GECS Portfolio

Revenue	2007	2008	2009	2010
Commercial Finance	6,039	2,949	(554)	(187)
Consumer Finance	4,269	3,664	1,663	2,629
Infrastructure	1,977	2,019	1,235	1,562
Corp/Elim	143	(858)	(1,450)	(858)
Total Net Income	12,428	7,774	894	3,146
Total Net Income Growth	21%	-37%	-89%	252%

Source: Company reports and J.P. Morgan estimates.

Looking specifically at the vertical assets, earnings were down ~40% in 09, still sizeable in the context of the overall GE portfolio that is now ~90% industrial in terms of profits. In the event of a downturn we see this portfolio as having similar risk this time around and declines here could have a significant impact on overall earnings. Every 10% decline here impacts the overall GE EPS by ~1%.

Table 182: GECS Portfolio

Revenue	2007	2008	2009	2010
GECAS	1,211	1,194	1,023	1,195
Energy Financial Services	766	825	212	367
Infrastructure	1,977	2,019	1,235	1,562
Growth Y/Y	6%	2%	-39%	26%
Overall GE Industrial Growth	14%	7%	0%	-2%

Source: Company reports and J.P. Morgan estimates.

What about Services?

Part of the bull case on GE has been its high share of recurring profit from product service revenue. Indeed, services have been a source of stability over time, with attractive recurring revenue dynamics that limit volatility to the downside. GE's large installed base is a competitive advantage in this regard. While continuing to provide a steady and recurring earnings stream, we think the services business in recent years has increased exposure to more discretionary and transactional activities (e.g., AGPs). And we believe that some of the recent dynamics influencing GAAP earnings are unsustainable over the long term (e.g., contract modifications that enable the company to write up the value of historical book profits, with a one-time catch-up adjustment), contributing to the weak cash conversion we have seen. We think GE refers to this as driving "productivity" in the installed base, though these benefits could eventually fade as the company works through all its LTSAs.

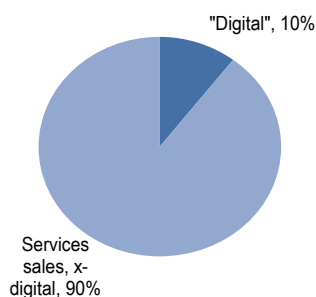
Brief Background: Here we define product service revenue as GE does. It is a non-GAAP measure that includes spare parts (goods) and equipment upgrades, including software, and repair services. As noted in the glossary section of the 10K, "**Product services:** For purposes of the financial statement display of sales..., "goods" is required [by the SEC] to include all sales of tangible products, and "services" must include all other sales, including other services activities...In our MD&A section, we refer to sales under product services agreements and sales of both goods (such as spare parts and equipment upgrades) and related services (such as monitoring, maintenance and repairs) as sales of "product services," which is an important part of our operations."

Table 183: Breakdown of GE Sales from Product Services

\$ in billions	
Product Services:	
GE sales of services (GAAP)	~\$32
Implied spare parts and equipment upgrades	~\$16
GE revenue from product services (non-GAAP)	~\$48
% of total GE Industrial sales	44%

Source: Company reports and J.P. Morgan estimates.

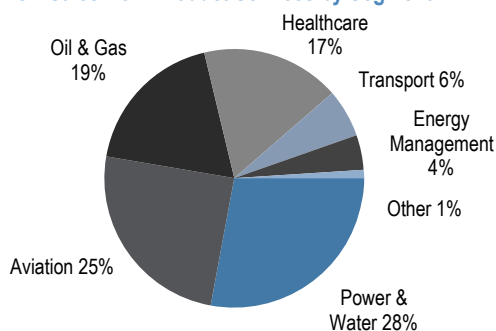
Breaking this down in another way, we show digital as a % of the total GE sales from product services, per recent GE presentations. Also notable is that within digital, the % Predix-enabled currently stands at close to half the total. This does not mean that the operating system has been enabled, just that it could be if the customer chooses to do so. We discuss digital in more detail in the next section.

Figure 225: Further Breakdown of GE Sales from Product Services

Source: Company reports and J.P. Morgan estimates.

At the operating segment level, Power & Water represents the largest share of services, followed by Aviation, Oil & Gas, Healthcare, and Transportation, representing close to 50% of sales for each segment. We dive deeper into Power and Aviation services in a bit.

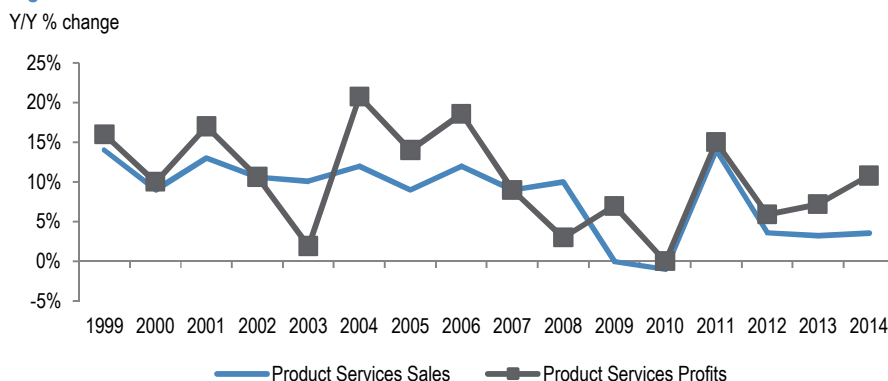
Figure 226: GE Sales from Product Services by Segment



Source: Company reports and J.P. Morgan estimates.

Product service results reported annually in the 10K show solid 15-, 10-, and 5-yr CAGRs in revenue at 8%, 6%, and 5%, respectively. On profits, the 15-, 10-, and 5-yr CAGRs are similarly solid at 10%, 9%, and 8%, respectively. GE speaks to the historical growth rate of services revenue as being ~5%, something they think they can accelerate in the future by upselling additional services, including Predix software, designed to guarantee and deliver customer outcomes. More important, however, is the resiliency exhibited during downturns. This has indeed proven to be a stable source of sales and profits in the most severe recessionary environments.

Figure 227: Growth in Product Services Sales and Profits



Source: Company reports.

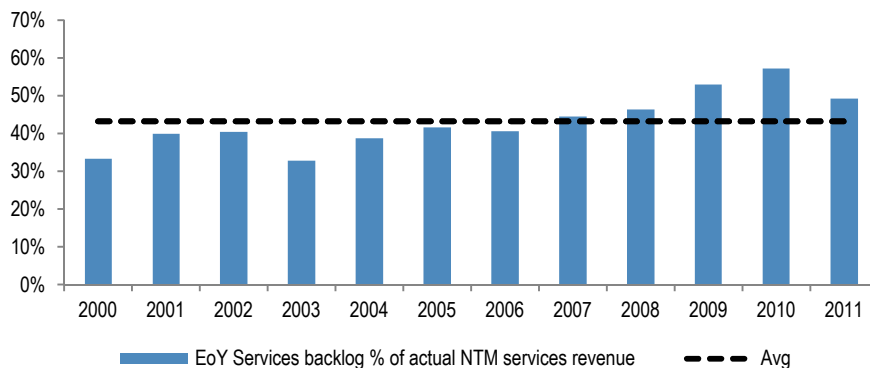
Key to this is the recurring part of the revenue stream, known as long-term service agreements (LTSA). Prior to 2011, GE used to estimate the % of next twelve months revenue expected from its services backlog, which represented on average 40-45% of the total service revenue the following year. We assume most of this relates to LTSA, which are stickier than the rest of the business that is more transactional. This can be seen in 2009 and 2010, when an estimated ~55% of the service revenue came from this LTSA driven backlog, before normalizing back to under 50% in 2011.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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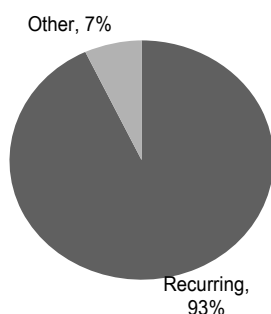
Figure 228: GE End of Year Service Backlog % of Reported Forward Year Service Sales



Source: Company reports, and JPMorgan estimates.

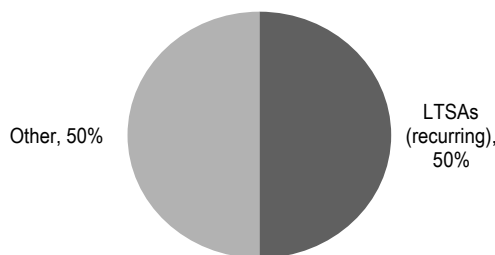
We think 50% is a reasonable approximation of the proportion of LTSAs in the annual service revenue today. This suggests around half is what we'd consider recurring, and the remainder is more transactional (could be deferred if conditions warrant). The point here is that while GE's recurring revenue does provide a degree of safety in recession, the portfolio is not all recurring, as for example ADT is. The goal at Aviation is to move even more of the new engine business to LTSAs over time (targeting 80%), similar to what Pratt is targeting with the GTF engine, while in Power we see AGPs as diluting the recurring revenue profile somewhat (discussed below).

Figure 229: ADT Recurring Revenue
% of total



Source: Company reports.

Figure 230: Estimated LTSAs in GE Services Revenue
% of total



Source: Company reports, and JPMorgan estimates.

Power Services

For basic service/maintenance revenue, OEMs will typically capture this in one of two ways: transactional service, or long term service agreements (LTSAs). The transactional business consists of one-off requests as maintenance needs arise, while LTSAs are essentially performance guarantees (availability, reliability, etc), typically including the cost of spare and replacement parts, for a fixed monthly fee based on usage. For leading gas turbine OEMs such as GE, the basic maintenance revenue will be approximately evenly split between the two. Beyond this, GE offers a range of different services and upgrades designed to either address specific customer needs or to improve the efficiency of an existing plant. Many of these services are contracted on a one-off basis while others can be included in LTSAs. Some of the major categories include:

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

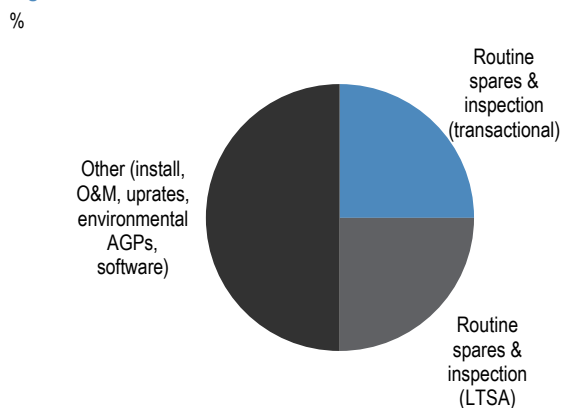
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- *Upgrades or equipment upgrades* – redesigning existing plants for either new functionalities or to improve efficiency. AGPs would fit in here.
- *Environmental services* – baghouse engineered systems, gas turbine inlet air quality services, industrial filtration services
- *Installation* – GE engineers will advise on the installation and commissioning of new plants. This includes turnkey projects where GE acts alongside a consortium of E&Cs
- *O&M* – full operations management that includes OEM design and engineering, remote monitoring and diagnostics, enhanced maintenance, inventory management
- *Software solutions* – a range of products designed to increase visibility on plant performance and improve efficiency. AGPs would fit in here too.

OEMs have increasingly moved their service offerings toward higher value add software and upgrades, going beyond the basic spares/inspection. This “non-routine” work, which includes the items mentioned above, represents about half of Thermal service revenue and is tougher for independent service providers to penetrate. In total, we estimate just 40-50% of Thermal service is truly recurring, and growth in AGPs has been pushing this total lower, in our view.

Figure 231: GE Thermal Service Revenue Breakout



Source: JPMorgan estimates.

Focus on AGPs: Advanced Gas Path (AGP) upgrades became part of the conversation in 2012. The AGP upgrade is a way for utilities to improve output, efficiency, and flexibility, creating more opportunities to be on the dispatch curve, while also extending maintenance intervals (increasing availability). As described by PSEGNY, the AGP upgrade is a result of “...advancements in combustion turbine technology, specifically in the hot gas path components and control system to improve fuel delivery and overall performance. The gas path components utilize improved aerodynamics, seals and cooling design to provide higher efficiency performance and greater power output...existing hot gas path components such as buckets, shrouds, nozzles, and associated structural elements will be replaced with functionally identical equipment designed to operate at higher temperatures...additional sensors, instrumentation, and controls are also included with the AGP technology to support the increased performance. Specifically these include thermocouples, flow monitoring devices, humidity sensor and pressure devices. In order to obtain the full benefit of the component upgrades, software modifications to the control system must also be completed. The upgrades include changes to the tuning constants and control curves that provide the operating parameters for the CT. There are also changes that allow peak firing and extended turndown.” A good overview of real world benefits is provided in the table below.

Table 184: Turbine Advanced Gas Path Values - Current vs Proposed

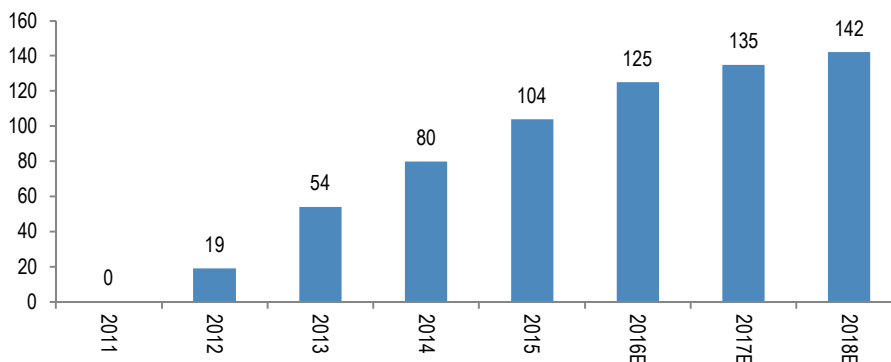
Component	GE 7FA (Current)	GE 7FA.04 (Proposed)	Comment
Nominal MW	165	174	Improved output 5-6%
Gas Turbine Heat Rate (Btu/kWh)	10305	9931	Improved efficiency 3-4%
Fuel Flow (lb/sec)	20.6	20.9	Improved fuel efficiency
Nox (ppmvd)	2.0	2.0	No change in emissions
CO (ppmvd)	4.0	4.0	No change in emissions
VOC (ppmvd)	2.0	2.0	No change in emissions
PM10 / PM2.5 (lb/hr)	14.0	14.0	No change in emissions
SO2	PUC Quality	PUC Quality	No change in emissions

Source: SDG&E.

AGPs have shown strong growth since 2012, with expectations for continued strength in the coming years. In 2015, the Thermal services business was driven by 30% y/y growth in AGP upgrades, and for 2016 management is targeting 125 upgrades, up ~20% y/y.

Figure 232: AGP Upgrades

Units



Source: Company reports, and JPMorgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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We estimate the value of these AGP upgrades at roughly \$15mm per unit, based on a sampling of projects for which we were able to gather data.

Table 185: Specific Examples of AGP Upgrades

Utility	Type	Upgrade Project	Cost (\$ in millions)	Per turbine	GT Award Year	GT Operational Year
PSEG	General Electric GE 7FA.03 natural gas-fired turbines	AGPs for 3 combustion turbines at Bethlehem Energy Center	\$50	\$17	2002	2005
PSEG	NA	AGPs for 2 CTs at PSEG's Bergen Generating Station in Ridgefield, NJ	\$48	\$24	1999	2002
PSEG	NA	AGPs for 4 CTs at the PSEG Linden Generating Station	\$69	\$17	2000	2006
SDG&E	GE 7A CTGs, each rated at 165MW at 62F	AGPs for 2 combustion turbines at Generation Plant Palomar	\$30	\$15	2001	2006
Duke Energy Carolinas, LLC	NA	BUCK 11 HOT GAS PATH INSPECTION WITH 32K - AGP UPGRADES	NA	\$17	2002	2011
Duke Energy Carolinas, LLC	NA	BUCK 12 HOT GAS PATH INSPECTION WITH 32K - AGP UPGRADES	NA	\$17	2002	2012
Tiverton	NA		NA	\$15	1998	2000
SCE	Four GE 7FA.03 units, two D-11 steam turbines and associated generators in combined cycle	AGPs for 4 CTs at Mountainview Generating Station	NA	NA	2000	2005
Wisconsin Public Service Corp	Two GE 7FB.01 units, equipped with Dry Low Nox (DLN 2.4) combustion system	AGPs and other items for 2 CTs in Fox Energy Center	\$68	\$34		
Essential Power	Two GE 7FA combustion turbines with HRSGs	AGPs for 2 GE 7FA gas turbines at its Newington Energy site	NA	NA	2000	2002
Dominion	Four GE 7FA units	AGPs for GE 7FA gas turbines at its Fairless power plant near Philadelphia	NA	NA	2001	2004
Dominion	Two GE 7FA units	AGPs for GE 7FA gas turbines at its Possum Point plant in Virginia	NA	NA	2001	2003
Dominion	Two GE 7FA units	AGPs for GE 7FA gas turbines at its Bear Garden plant in Virginia	NA	NA	2002	2011
Dynegy	NA	Eight sets of AGP upgrades and GE's OpFlex* Peak Fire software for the fleet of 7FA.03 gas turbines at Dynegy's Hanging Rock Energy Facility and Washington Energy Facility in Ohio and the Fayette Energy Facility in Pennsylvania.	NA	NA	2000/2001	2002/2003
Dynegy	NA	Four sets of AGP hardware to boost output and enhancing compressor performance and reliability through the installation of new compressors and stators, at its Independence Energy Facility in Oswego, New York	NA	NA		
KOSPO	Six AGPs	Six AGP systems at its Shin Incheon plant	NA	NA		
Calpine	Two AGPs	Maine	NA	NA	1999	2001
Calpine	Two AGPs	Pastoria plants in California	NA	NA	2000	2005
Calpine	Two AGPs	Los Medanos in California	NA	NA	1999	2001
IBERDROLA	Two AGPs	AGP upgrades on Two units at its Altamira V plants	NA	NA	2002	2005
IBERDROLA	Six AGPs	AGP upgrades on Six units at its TAMAZUNCHALE	NA	NA	200/2003	2003/2006
J. M. Barry Plant	Four AGPs	The solutions are expected to deliver a total output increase of more than 6 percent, which will equate to 40 more megawatts (MW) of power	NA	NA	1998/2001	2001/2003

Source: JPMorgan.

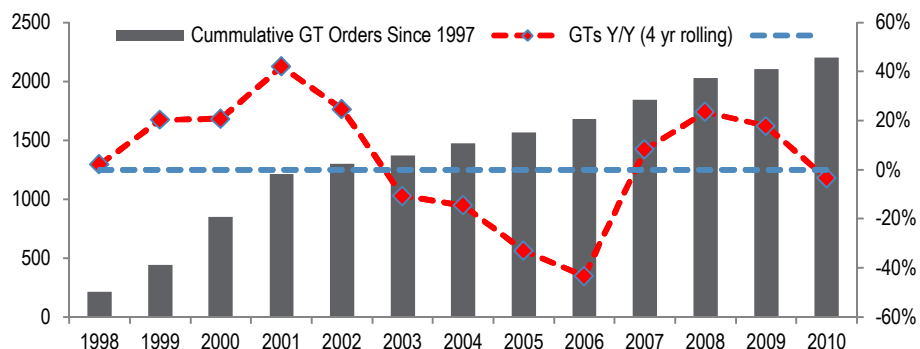
It's no coincidence that growth in AGP upgrades comes from the installed base put in place during the power bubble in 1998-2002. Parsing through publicly announced AGP awards as highlighted in the table (~65-70 awards listed), almost all of them are for GTs that are approaching ~10-15 years in service, particularly the F Class. Per McCoy, GE received ~1300 GT orders from 1998-2002 of which ~700 were F Class. On a 4 yr rolling basis, GT order growth picked up dramatically in 1999-2001 before decelerating sharply into negative territory by 2003.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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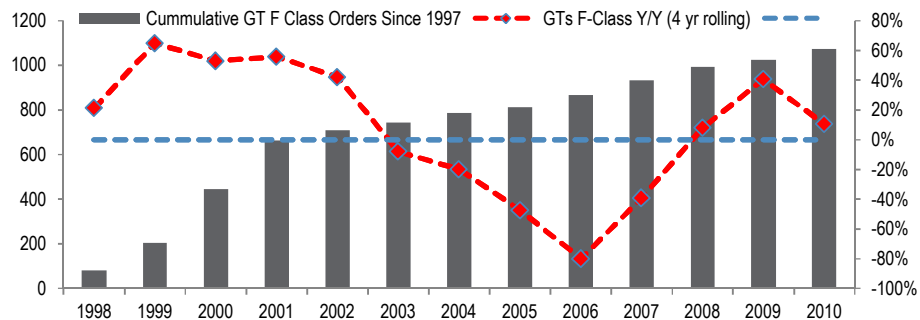
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Figure 233: GE GT Orders during the Bubble vs Y/Y GTs Orders



Source: McCoy, Company reports and J.P. Morgan estimates.

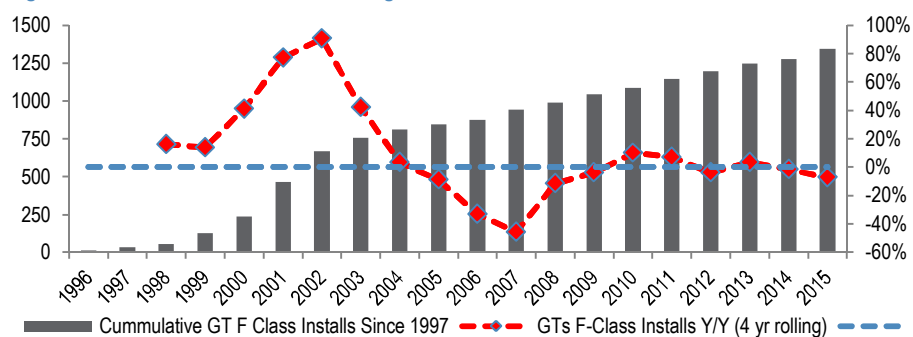
Figure 234: GE GT F Class Orders during the Bubble vs Y/Y GTs F-Class Orders



Source: McCoy, Company reports and J.P. Morgan estimates.

Per McCoy, GE installed ~600-650 F Class turbines globally during 1998-2002. This number barely doubled to ~1300 over the next 13 years, highlighting the strength seen at GE Power during the US power bubble.

Figure 235: GE GT F Class Installs during the Bubble vs Y/Y GTs F-Class Orders



Source: McCoy, Company reports and J.P. Morgan estimates.

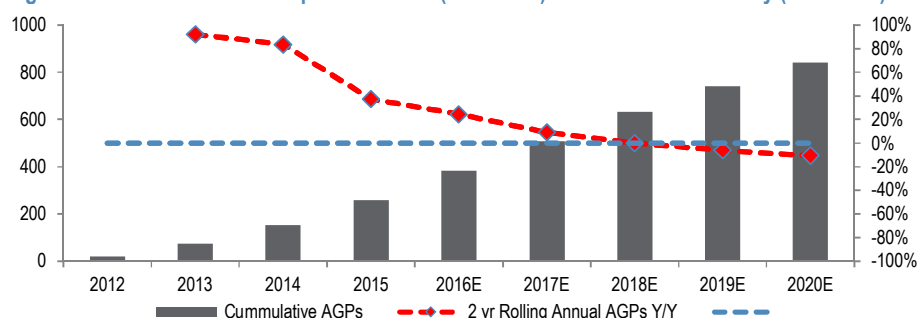
C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Cumulative AGP upgrades touched ~257 units as of 2015, and are expected to reach ~385 by the end of 2016, the majority of which are F Class. The ~385 upgrades represent ~60% of F Class turbines installed during 1998-2002 (~600-650). Looking out to 2020, and widening the target market commensurately, this suggests ~800-850 in upgrade opportunities for the F Class turbines installed from 1998-2006. By this token, there could be an incremental ~400-450 upgrades from 2017-2020 versus the 385 cumulative expected to be done through 2016. On an annual basis this amounts to ~100-110, which would be a slowdown from current levels (125 expected in 2016). We note that GE has indicated that more AGP/AGP-like upgrades are in the pipeline that will be in market soon, as they go backward to B and E fleets, suggesting continued runway (not one and done with the F upgrades). While there is limited detail on timing, we have given them some credit for this in our AGP forecast (135 and 142 modeled in 2017 and 2018). However, taking a more conservative approach using the above math from F Class installs would imply a more significant slowing in growth, and declines toward the end of the decade.

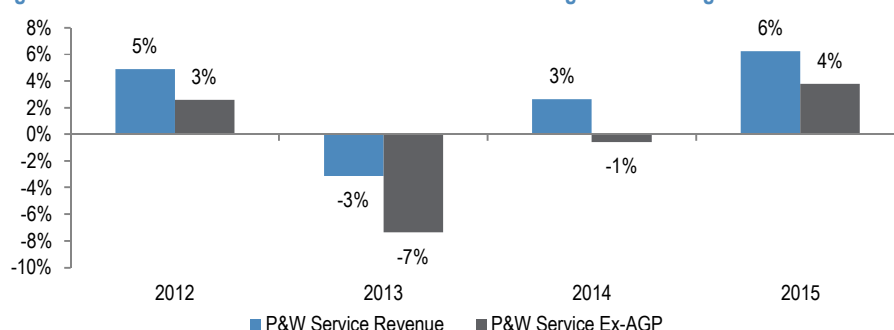
Figure 236: Illustrative AGP Shipment Growth (2012-2020) on F Class Installs Only (1998-2006)



Source: Company reports and J.P. Morgan estimates.

Recent performance and the near-term growth outlook, however, remain strong, and the key driver of Thermal services results. Thermal services organic sales grew double digits in 2015 (6% reported), largely driven by 30% growth in AGP upgrades, and for 2016 management is targeting 125 upgrades, up ~20% y/y. Service growth ex-AGPs (assuming ~\$15mm per AGP upgrade), on the other hand, was up low to mid-single digits last year, suggesting that continued growth in AGPs will be key to above average growth in forward years (given the combination of hardware and software here, which we will discuss later, this is good for mix as well).

Figure 237: Power & Water Service Revenue Growth including and excluding AGPs



Source: Company reports and J.P. Morgan estimates. For 2015, we have made an assumption based on prior segmentation for comparability services.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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We think AGPs are a factor behind the slower growth in Thermal services ex-AGPs (i.e., this is not all incremental), as the revenues can eat into existing revenue streams by extending maintenance intervals, while at the same time creating a more transactional business model. Management has talked to the majority of cases involving the sale of AGPs getting delivered through existing LTSAs, so these are performance programs through an existing LTSA where they infuse analytics and deliver new outcomes. This helps them to raise price and/or grow margin through “productivity”. It is our understanding that customers may gain an opportunity to renegotiate the LTSA after purchasing the AGP, reducing future payments in exchange for the upfront expense. For GE, they get the upfront sale, and possibly a chance to increase the value of the contract if it enables them to hit on the performance guarantees at a lower cost than initially embedded in the deal (i.e., perhaps a part of the non-cash LTSA contract adjustments described earlier). In certain instances, customers may choose an upgrade in lieu of the existing long-term maintenance contract. While this is less common, we recently came across direct testimony from SDG&E indicating why they chose this particular route, which we describe below.

Case Study from SDG&E: Bottom line is that they think the LTSA costs more than it’s worth because parts last longer, so they broke the contract, are putting the work out for bid now, which is 10-20% lower than GE, and as part of the restitution, they bought the \$30mm in AGP upgrades which represents three sets of parts that now sit in inventory to be installed in ‘18. SDG&E also replaced the Mark VI turbine controls and went with Emerson Ovation system to go along with their new PSM services agreement (the best non-OEM alternative). As quick background, when the Palomar Energy Center became operational in ’06 it signed the LTSA with GE, purchasing two sets of spares as part of the contract. Rates go up every year. They thought they’d need overhauls every 12-16k fired hours, but pushed to 24k because was working better than expected. They even got the turbines to 32k hours prior to the major overhaul in ’14, and when they inspected it then, everything looked fine. They terminated the LTSA at 53k hours (these contracts tend to last 96k operating hours, or 8-12 years). While some would like to get out of LTSAs, many don’t care (regulated mostly) and are just risk averse as they can pass through to rate base.

Specific excerpts from the testimony are provided below:

Palomar Energy Center (PEC) consists of two GE Frame 7FA combustion turbine-generator sets (CT) and a single steam turbine-generator set (ST). Each CT exhausts into a heat recovery steam generator (HRSG), each of which is equipped with selective catalytic reduction system (SCR) for removal of nitrogen oxide (NOx) and an oxidation catalyst for removal of carbon monoxide (CO). The steam produced in the two HRSG’s is supplied to the single ST. Exhaust steam exiting the ST is condensed in a steam surface condenser by transferring heat to circulating cooling water. Heat in the circulating cooling water is then rejected to the atmosphere in an evaporating cooling tower.

Palomar CTs will no longer be covered under a Long Term Service Agreement (LTSA) with the equipment manufacturer. As background, Palomar was purchased by SDG&E through a Turnkey Acquisition Agreement between SDG&E and Palomar Energy, LLC. The LTSA was purchased through GE, the manufacturer of the prime components utilized in the plant (i.e., the combustion turbine system and steam

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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turbine system). The LTSA addressed planned maintenance costs and was calculated and payable according to a schedule contained in the agreement.

After completion of the 2014 Major inspection and maintenance at PEC, SDG&E will terminate the LTSA with GE. The termination will be in accordance with the "termination for convenience" provision in the LTSA. Effective, June 30, 2014, SDG&E entered into an agreement with GE, whereby as part of the LTSA termination SDG&E would procure components necessary for an Advanced Gas Path upgrade, which will result in an improved plant output, to be held in inventory until installed. The agreement requires the components, valued at \$30 million which is net of trade-in of older components currently in service, to be purchased in 2014. Termination of this agreement will allow SDG&E to establish a lower cost, more flexible turbine maintenance program. Payments previously made to GE under the LTSA covered items such as engineering support, remote equipment monitoring by GE's Monitoring and Diagnostic Center, major component refurbishment and replacement, replacement parts, labor for major and minor maintenance outages and inspections, as well as on-side administrative and technical support. These functions will now be performed by an on-site turbine maintenance coordinator and through the use of contracts with a variety of original equipment manufacturer (OEM) and third party service providers.

Commercial Aerospace Services

The most important way that commercial aircraft engine OEMs are trying to ensure stability in their aftermarket growth is through LTSAs. The chart below shows that about every two decades there is a major improvement in engine technology. Each new generation of engine is more fuel-efficient, quieter, and (crucially) more reliable than the previous generation. This increase in reliability means that newer engines require fewer shop visits over their lifetime. However, the value of shop visits for the newer engines is much higher than on previous generation engines; so, *in theory*, the through life value for the OEMs should not change.

However, the OEM faces two problems. The lesser problem is one of timing: because the modern engines are so reliable the airline may defer the shop visit by a year or more, resulting in lumpier aftermarket sales. The bigger problem is that the airline (or lessor owner) may decide to take a modern engine out of service early (e.g., before the lucrative final one or two shop visits).

The OEMs can address the two problems above with LTSAs. Under an LTSA the airline pays an annual fee to the OEM for the maintenance of the engine, usually based on the number of hours flown. The fee varies by airline, since engines in hot / polluted regions will require more maintenance than engines operated in more benign environments. Some airlines will also use their engines more aggressively.

Figure 238: Narrow-body engine technology – the shift toward long-term service agreements over time (illustrative scenarios only)



Source: Printed with permission from MTU Aero Engines (November 2012)

OEMs gain significant benefits from LTSAs

LTSAs provide OEMs with genuine benefits to their operations, genuine benefits to cash flow, and – *depending on accounting practices employed* – the potential to smooth reported aftermarket revenues and profits.

- **Genuine benefits to OEM operations:** LTSAs allow an OEM to manage the workload in its service centres much better. Rather than have unpredictable lumps of aftermarket work the OEM can decide when to overhaul an engine (the airline is agnostic as the OEM will provide it with a spare engine) and thus achieve a much better work flow in its service centers. Also, given the OEM receives a fixed amount of dollars for every engine flying hour, if the OEM can reduce the cost of servicing an engine / supplying spares, then those savings should accrue to the OEM not the airline.
- **Genuine benefits to cash flow:** Under LTSAs the airline will pay a fee every month or year to the OEM based on the number of flying hours on an engine. This means the OEM does not need to wait ~5 years or more for the first shop visit to generate cash flows from the aftermarket.
- **But revenue and profit recognition under LTSA varies significantly between OEMs:** We believe that Rolls-Royce (RR) currently has the most "aggressive" accounting policies for LTSAs. Starting in year one on an LTSA RR will book annual revenue, generally commensurate with the cash payment it receives. Since RR is unlikely to incur any meaningful costs on an engine in the first ~4 years, RR books a notional EBITA margin on these LTSA revenues in years one to four. In this way RR is smoothing its AM revenues and EBITA, rather than only booking revenue and EBITA at the time of a shop visit. On the other hand, Pratt & Whitney and MTU (partners in the IAE consortium) and GE also receive annual cash payments on LTSAs but they do not book any revenue or EBITA

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

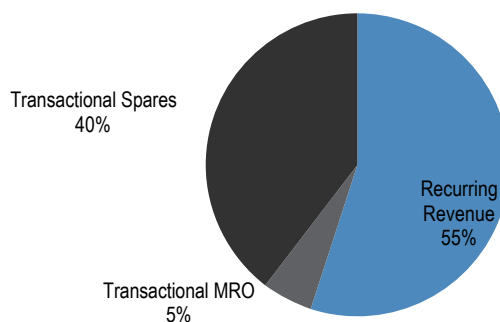
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until the actual shop visit occurs. Instead, they hold the cash received in customer prepayments on their balance sheet.

Commercial aviation services revenue at GE contributes ~85% of service revenue for the entire segment. Of this, ~50-60% of the contracts are currently on LTSAs, per management (80% of new contracts on LTSAs, 40% of old on LTSAs). Safran, a 50% engine partner for the CFM 56/LEAP with GE, at its investor day noted that RPFH contracts (rate per flight hour or LTSAs) will be 50-60% of LEAP + CFM fleet by 2020, which is lower than what they had expected at the 2013 investor day. The reasons they cited were higher orders (10K vs 2K then), which helped them get a better picture of behavioral trends in the market vs three years ago, as well as some airlines preferring to postpone service decisions with the expectation that other players possibly enter the market. In any event, we view the move to more of these contracts as a positive over the long term, creating a more recurring revenue stream. The rest of the services portfolio is more transactional and can be pushed out or cancelled based on end market headwinds/competition/structural market changes.

Figure 239: Aviation Commercial Services Recurring vs Transactional



Source: Company reports and J.P. Morgan estimates.

Other Segments (O&G, HC, etc)

Management hasn't provided much additional disclosure on the portion of LTSAs / CSAs as a % of Services revenue.

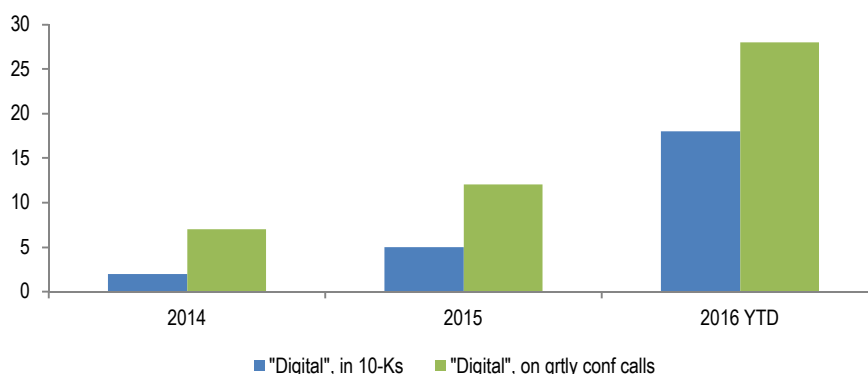
Debate #3: The Impact of Digital

Given a lack of growth elsewhere, and general over-capacity in capital goods markets, investor focus has shifted somewhat to software and the Industrial Internet as a good story. Indeed, with the evolution of the cloud and sensor technology, there should be an acceleration of the proliferation of the Internet as the next layer of productivity. This is resonating in stock multiples as well, as per Roper, the stock in our group with the highest percentage of its portfolio in software (~35%), trading at a ~45% PE premium. We also see companies like Rockwell, making the “Connected Enterprise” as the centerpiece of its recent investor day (though ROK has not broken free of its historical cap goods multiple range).

GE has invested heavily over recent years to make its mark here, with a new software center in San Ramon, CA, that houses ~1,800 employees, and what has now become somewhat of a full court press on investor relations with its “Minds and Machines” day. After spending ~20% of its December investor day slides on the “Digital” story, the number of times the word “digital” was used in the 10-K this year more than tripled y/y, while the amount it's been mentioned on earnings conference calls has already more than doubled year to date.

Figure 240: “Digital” Mentions in 10Ks and Quarterly Earnings Calls

Number of mentions



Source: Company reports, and Bloomberg.

Looking back, GE's “software” (i.e., digital) revenue number first came into prominence at the 2012 EPG presentation where they disclosed revenue of \$3B and growing at a ~15%+ CAGR, in which they had two slides, talking about low-dose CT (Healthcare), fuel optimizer (Transportation), grid IQ (Energy Connection), integrity model (Oil & Gas) and fuels & controls (Aviation) as core products. The 2014 services meeting had a dedicated presentation on the services business, and this is where the platform began to gain most traction. On the software portion of the business, GE talked specifically about Predix (no mention of ‘software’ revenue) where they guided to \$4-5 B of Software revenue to be Predix enabled by 2017 from \$0.8 B in 2013. At the 2015 EPG conference, management laid out a 2017 ‘software’ revenue target of \$8B vs \$5B in 2015 with ~70% of revenues ‘Predix enabled’ by 2017. The latest disclosure at the Dec’15 outlook meeting has “Digital” revenue at \$5B in 2015 (with ~50% Predix enabled), broken down by segment as we will show shortly.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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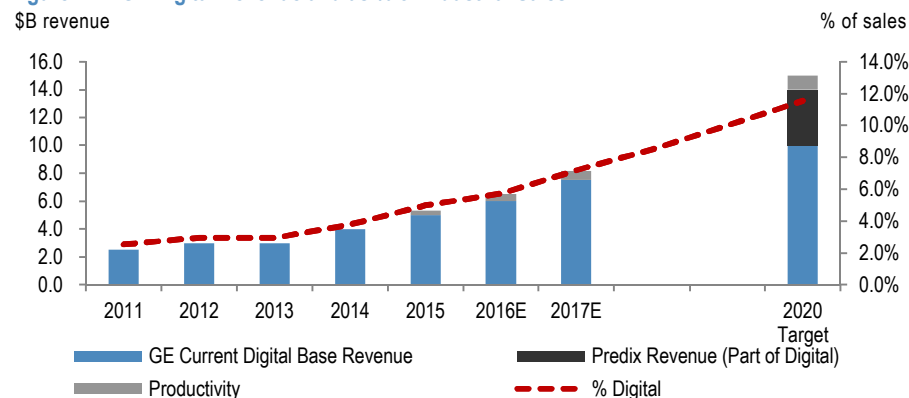
Table 186: Timeline of Digital Story

Period/Presentation	Comments
2012 EPG (May)	Disclosed Software at \$3B revenue
2013 EPG (May)	Software revenue of \$4B, Predix orders of \$800mm
2Q14 Earnings (July)	\$1.3B Predix revenue in '14
2014 Services Meeting (Oct)	Guided to \$4-5B Predix enabled revenue by '17, with detailed walk through products by segment
2015 EPG	'Software' revenue of \$5B in '15 (50% Predix enabled), \$8B in '17 (70% Predix enabled)
2015 Outlook Meeting	'Digital' revenue of \$5B in '15, '++' growth in '16. Provided a breakout of revenue across key segments with '16 growth targets

Source: Company reports, and JPMorgan estimates

In March 2016, the company showed in a presentation by the head of GE Digital targets to hit ~\$15B in revenue by 2020. Conversations with management indicate that this includes ~\$1B in productivity driven revenue (up from ~\$300mm in 2015, \$500mm in 2016 targeted, and drops straight through to the bottom line), ~\$4B from independent/third-party Predix sales (discussed more later), and \$10B in Digital sales (comparable to the current \$5B). Having sized this business and the much discussed growth opportunity, we now dive into the components that make up this non-GAAP revenue bucket.

Figure 241: GE Digital Revenue and as % of Industrial Sales



Source: Company reports and J.P. Morgan estimates.

What's "Digital" Revenue?

Analysts like to build models around platforms, and certainly one that may have software at its heart is especially interesting, given typically higher margins in these types of products. However, given this "initiative" seemingly came onto the scene only recently - the term "Digital Revenues" finally made its way into the 10-K this year, defined as "revenues related to software-enabled product upgrades, internally developed software (including Predix) and associated hardware, and software-enabled productivity solutions" - we think it's necessary to dig deeper to identify what exactly makes up this non-GAAP revenue bucket (the current \$5B), and source of recent growth in an effort to properly model growth going forward. We start by providing a summary of classification across different segments below.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Power – This is the largest segment, with \$2.8 B in sales, or ~10% of the segment. This is probably among the loosest defined digital platform, as it includes “software-defined machines with controls and user interface and software”. Advanced Gas Path upgrades are probably the best example of the type of offering included in this line item. Revenue that makes its way here includes the hardware associated with the AGP sale given a base package typically includes OpFlex, GE’s version of embedded optimization software. Our sense is that all of the AGP revenues are Predix enabled as well, although this doesn’t mean that the operating system has been turned on, just that the customer could if they choose to. We discuss further how we think of AGPs in the context of Digital in a bit.

Healthcare – This is probably one of the more mature software businesses, but also not particularly differentiated and more competitive (as per ROP). They report ~\$1.5B of sales for ’16 (~9% of total). The core new source of growth is Cloud Advanced Visualization, with data that is sent to the cloud, images processed with an ability to view and manipulate images on browser services. The majority of the revenue here was reclassified from the old Healthcare IT sub-segment to ‘Digital’, with Predix enabled revenue likely minimal at this stage.

Oil/Gas – This is about \$400mm, or ~3% of segment sales for ’16, that management says is mainly ‘software’. Here the applications are around midstream/pipeline optimization, and their field vantage product which is mostly used in downstream. The penetration of upstream is understandably low.

Transportation - This is one of the examples most highlighted by management, discussing a locomotive as a “moving data center”. This is about a \$500mm business (~10% of segment sales), primarily sold as freestanding software, according to the company. It includes optimization and performance solutions for trains, and customer performance analytics (RailConnect 360).

Table 187: Digital Revenue Breakup

	2015 Digital Revs (\$B)	Digital Growth 2016 Y/Y	2016 Digital Revs JPMe (\$B)	Offering/Solutions
Power	2.0	35.0%	2.8	AGPs, Opflex
Healthcare	1.5	5.0%	1.5	GE Health Cloud, clinical optimization, care system optimization
Transportation	0.4	20.0%	0.5	Train performance + optimization solutions, Customer performance analytics, Non-GE fleet penetration
Oil & Gas	0.3	25.0%	0.4	Pipeline optimization & integration, Field vantage & productivity, Subsea RM&D
Other (EC, Renewables, Aviation)	0.7	5.0%	0.8	Wind PowerUP (Digital Wind Farm), Aviation Analytics, Asset control and optimization for the Grid
Total	5.0	23.8%	6.0	

Source: Company Reports, J.P. Morgan Reports

AGPs - More Hardware than Software Driven Savings

The growth of Advanced Gas Path upgrades has coincided with the growing digital conversation at GE. Given estimated revenue of \$15mm per AGP upgrade, this suggests the majority of the “Digital” revenue at Power is from this source alone (\$1.9B of \$2.8B in ‘16E revs). We view this as an example of an offering that is bucketed as “Digital Revenues”, but is not exactly what comes to mind when thinking of something digital. This is not to say that there is no digital component here. The solution per GE “blends hardware innovations with GE’s advanced OpFlex

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

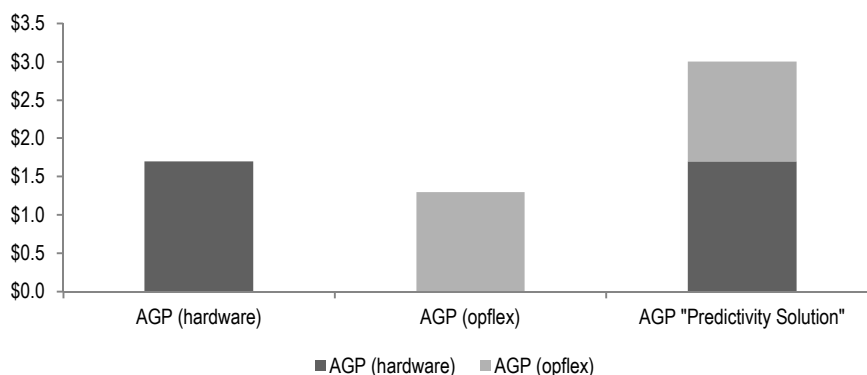
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software.” OpFlex is a model-based control solution that was developed in the Aviation space. As an example of the benefits, the typical start time for one of its turbines is 45 minutes, and with OpFlex this can be reduced to 15 minutes, enabling the customer to get to the market quickly to take advantage of profit opportunities. GE estimates that the average customer annual value per unit from AGP hardware alone is \$1.7mm. When married with the OpFlex software solution, this adds \$1.3mm in customer benefits, or slightly less than the hardware driven savings. Together, the AGP/OpFlex solution yields a total of \$3mm in average customer annual value per unit, which would mean a 3-5 year payback on the investment.

Figure 242: AGP Upgrades: Hardware versus Software Savings

Average Customer Annual Value Per Unit, in millions



Source: Company reports.

Is This Different Than Ecomagination?

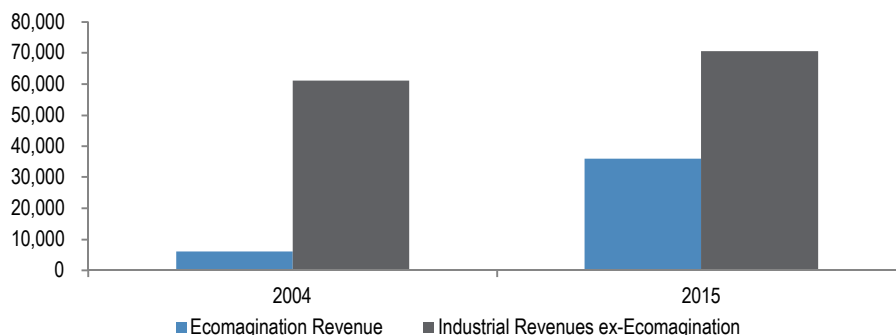
This reminds us of the Ecomagination initiative, a smart marketing idea announced in 2005 that was able to capture the essence of the push towards “green products” at GE. Indeed, qualified revenues started at \$6B in 2004, showing this was more about definition and tagging than something organic starting at zero. Over the next ten+ years, revenues here grew to \$35B in 2015, a CAGR of 18%. However, at the same time, removing NBCU from the base year, GE Industrial revenues ex-Ecomagination expanded at a 1% CAGR, with total company revenue posting a 4% CAGR. This is the key point here. Measuring this “platform” as “incremental” revenue and assuming other revenue grew along with the economy would have shown a dramatically different outcome, or Industrial revenue that should have been ~\$135B instead of the ~\$105B GE ultimately delivered. Bottom line is that these platforms are not incremental revenue drivers, merely parts of the base business that are redefined and marketed as something different.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 243: Ecomagination Revenues



Source: Company reports and J.P. Morgan estimates. Note: Industrial ex-Ecomagination adjusted in 2004 to exclude NBCU.

It's interesting that many of the products defined as "digital" today are also defined as "ecomagination" products, including Predix. Looking many years back, we show a host of product examples below that might also have been considered "digital" in 2009 based on how the company is defining it today. This list is not exhaustive.

Table 188: Similar Product Examples from GE Ecomagination Portfolio of 2009

Segment	Products
Aviation	CFM56 Tech Insertion
Aviation	CFM56-3 Advanced Upgrade
Power	OpFlex Turndown technology
Power	Field Force Automation Software System
Power	Kn 3™ Optimization Software for Power Plants
Healthcare	Centricity Enterprise Electronic Medical Records
Healthcare	Digital Mammography
Transportation	Trip Optimizer Software

Source: Company reports.

Digital Hasn't Contributed Significantly to Revenue Growth So Far

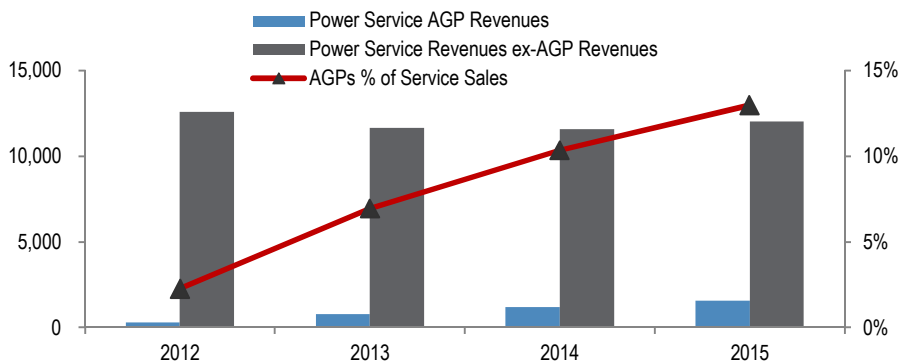
While acknowledging this is early innings considering GE's 2020 Digital targets, when we compare the current Digital phenomenon so far to Ecomagination, we see similarly unimpressive results for the base business (ex-Digital). For instance, GE's Power and Healthcare segments have the highest amount of "GE Digital" sales (~70% of total), but each has hardly grown its service revenue from 2012-2015. At Power, Services revenue is up ~\$0.7B from 2012-2015 (ex-ALO), despite ~\$1.3B in incremental sales from AGPs alone. Healthcare, meanwhile, which has ~\$1.5B in Digital sales that likely haven't grown from 2012 levels, has seen its Services revenue decline ~\$300mm from 2012-2015. Note, these conclusions are derived from total sales and do not take FX into consideration, given a lack of available information on the business breaks within these sub-segments.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Figure 244: Power Service Revenues ex-AGPs are down



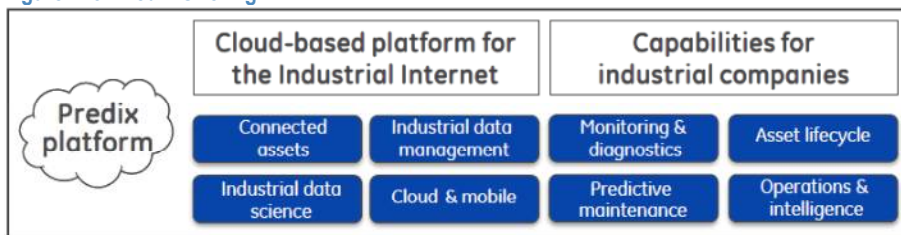
Source: Company reports and J.P. Morgan estimates.

Predix enables asset and operations optimization by providing a standard way to run industrial-scale analytics and connect machines, data, and people. Deployed on machines, on-premise, or on the cloud, Predix combines a stack of technologies for distributed computing and big data analytics, asset data management, machine-to-machine communication, and mobility.

Predix the key long-term recurring revenue driver

Simply put, we believe Predix, officially launched this year as a third-party software solution, offers Internet-of-Things (IoT) related services as a SaaS model. They offer customers the underlying IT infrastructure, an analytics engine, and a few pre-designed apps to connect their own devices and analyze data from their equipment. Predix is basically a cloud-based operating system (OS) like IBM's Softlayer, Windows Azure or AWS, but for Industrial companies that allows companies to either use these pre-designed apps developed by GE or develop their own apps suited to their needs. Companies here benefit from enterprise class analytics to help make sense of all the equipment/operations data and variable cost structure in their factories/plants. Predix is not restricted to customers that own/procure GE's equipment or other services, meaning this could possibly become a new revenue stream once the platform is more mature. For 2016 GE plans to have 200K+ assets under management for the Predix platform, 100+ applications, 20K developers and ~50 partners.

Figure 245: Predix Offering



Source: Company reports. Used with permission

While still in early stages of adoption (just launched in past year), we think Predix could become a sustainable revenue offering for GE. Key for it to succeed across the industrial landscape will be the robust nature of the platform, GE has the big advantage of being a big industrial company, having better capability than any other pure software company like MSFT, IBM, GOOG or Amazon, to understand the needs of the industrial world, however the above software companies are much further ahead in terms of software expertise and experience when it comes to cloud/hosting platforms (we note GE has made technical collaborations with key software players and made acquisitions in this space). A SaaS type model would create a recurring revenue stream, with GE likely charging customers for usage (connected to Predix per hour/day). While Predix margins could also be above the

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

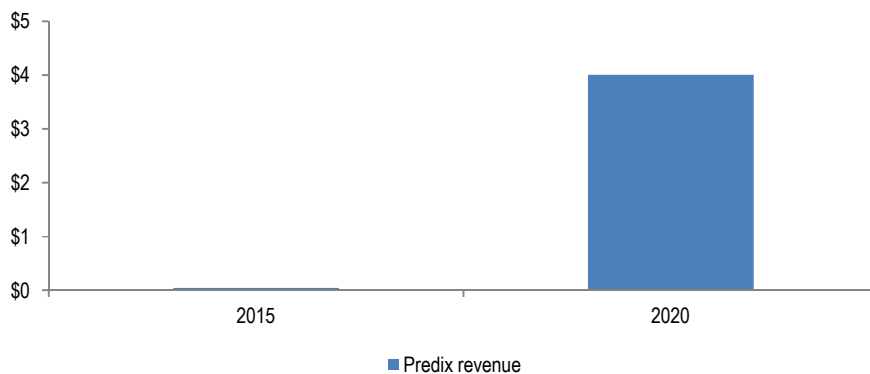
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company average, we note that there is severe pricing compression in the industry with software giants competing for the cloud space. Management expects this business to grow from close to zero today to \$4B in revenue by 2020.

Figure 246: Predix Revenue Expectations

In billions



Source: Company reports.

All this comes at a cost

We believe there is high near-term cost associated with the initiative. Investment has already hit a \$1B run rate, driven by the software COE in San Ramon (1,800 employees currently), the IT digital thread, business downstream, and edge devices. A portion of this investment also makes its way into the large cash outflows from “other investing activities” discussed earlier. We also point to IBM, a company in transformation mode that took \$1.5B of restructuring last quarter as revenues continue to decline, with a negative tradeoff between new and old businesses. They are a good example of how this transition is sometimes $2-1 = 0.5$. IBM has been undergoing a “transformation” for some time, prying out the less well positioned equipment business to focus more on software/solutions. Here, what we have seen is that during this transformation, the company has delivered gains in key areas of focus, however, it is also undergoing turnover underneath the surface which is costing them significantly when it comes to restructuring that, as per the CEO’s comments is not a 1 for 1 payback, with a stock multiple that has gone from ~12.5x earlier this cycle (and mid teens last cycle) to ~10.5x now. In the end, these types of transitions have a cost, and even a renowned tech giant like IBM is not necessarily seeing outsized benefits in results, or stock price for that matter.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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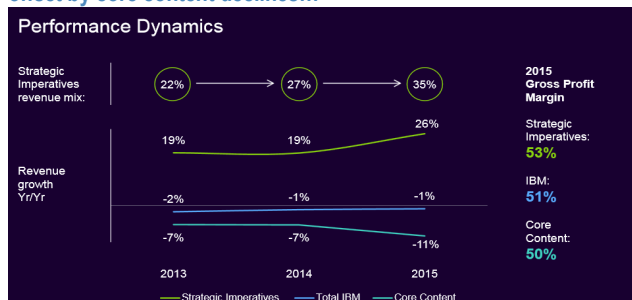
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Figure 247: IBM has focused on transformation...



Source: Company reports. Used with Permission

Figure 248: ...but good execution on strategic imperatives has been offset by core content declines...



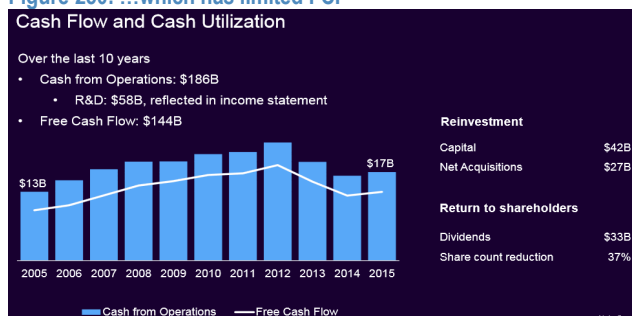
Source: Company reports. Used with Permission

Figure 249: ...and strategic imperatives have required investments...



Source: Company reports. Used with Permission

Figure 250: ...which has limited FCF



Source: Company reports. Used with Permission

The company has also pointed out that this type of transformation requires significant investment, and they have spent around \$1B per year on workforce rebalancing over the past few years. We paraphrase here some comments the company's CEO made during its Investor Day that underscore this point.

- "On savings, we expect that we'll reinvest a lot of the savings as we start to realize them...this is not about capacity reduction; it's actually about moving into these new areas where we see new opportunities."
- "On restructuring...it really is about shifting the work force from a set of skills that have value in the marketplace today to a new set of skills where we're trying to build new businesses. The minority of the charge, if you will, is for reductions in usable capacity. The bulk of this is to get new set of skills."
- "We think about our ability to acquire skills. In many of these sectors, we will hire them as quickly as the world can create them. We hired 1,000 security experts last year and quite frankly, if world created 2,000 of the caliber and the kind of talent we needed, we would've hired 2,000. But the world creates these skills at a certain rate and we'll hire them as aggressively as we can. We have some limits in terms of how do we put them to work and where's the demand and does that all match up, but we'll hire people as aggressively as we can as we build these businesses out. We are relying on some pretty unique talents in some these businesses."

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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For GE, the company has about 20K software engineers (we estimated cost of \$100K per employee), and they hired 2,000 in the past 24 months. They are planning to get rid of 7,000 contractors and hire back 3,000 employees to in-source work they had previously given away to third parties. The company also spends \$3.5B on IT (~3% of sales). These comments lend support to our assertion that significant investment is required to undertake these initiatives, and helps to explain why restructuring is not making its way into numbers at GE.

GE software story versus others

The company is well ahead on the marketing play here when it comes to projecting Predix as the leading Industrial Internet platform, but we believe this move is more a function of evolution and need of the industry rather than something that's purely innovative. Indeed, they are not the only ones involved here, in what may ultimately become more of a cost of doing business than an additional revenue stream. For example, Caterpillar recently announced its own digital initiative, known as "Caterpillar's Digital DNA". Per the recent press release, "with the largest fleet of connected assets in the world, at around 400,000 and counting, Caterpillar has had the capability to connect to customers for quite some time...now, we're placing an even bigger emphasis on the digital space." Separately, CAT touted "EMD uptime", a predictive analytics platform that will transform the rail industry, predicting potential failures in locomotives before they occur. This is but one example of a large GE competitor headed down the same path. In short, GE Digital is not alone here, and we see this as eventually becoming a cost of doing business. Taking the "Digital" revenue at face value, we note that 5% of sales is not that different than others that have disclosed such data. It's important to keep in mind that this is not all application software or SaaS, as per the above, where we show a somewhat loose definition of software.

Table 189: Global Industrials exposure to Industrial Software (2015E)

Company	% of group sales **
HON	2.5%
ROK	<10%
GE	5.0%
Siemens	3-4%
Schneider	~6%

Source: J.P. Morgan estimates. * Excludes industrial software sales accounted for in non automation divisions for Schneider. *** Excludes embedded software.

SotP

Given the increase in Digital revenue in the mix, we show the SotP breaking this out and assigning a software EV/sales multiple. For the rest of the businesses, we use the normal comps. Net net, this results in a ~5% improvement vs our regular SotP (discussed in the Valuation section), and still implies a ~15% decline at current levels.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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Table 190: GE SoTP Breaking out Digital

	EBITDA 2017E	Suggested Multiple	Suggested value	Comments/Peers Used
GE Industrial				
Infrastructure ex- HC/O&G/Renw/Lighting ex-Digital	12,481	10.5	130,475	DHR, DOV, EMR, Siemens, HUBB, ROK, UTX, ABB, Rolls-Royce, COL, Safran
Renewables ex-Digital	701	7.5	5,220	Vestas, Gamesa, Goldwind
Oil & Gas ex-Digital	1,023	14.6	14,920	FTI, HAL, SLB, DRQ
Healthcare ex-Digital	3,202	12.8	41,084	HOLX, VAR, ABT, BAX, BDX, BSX, JNJ, MDT
Lighting ex-Digital	177	14.7	2,599	CREE, AYI
Digital (EV/Sales)	7500	5.6	41,994	VEEV, MDSO, CHKP, AZPN, MANH, ANSS
GE Industrial	20,349	11.6	236,291	
GECS Tangible Book	14,000	1.1	15,660	
Net debt (2016 end)			7,121	
Underfunded pension			(27,000)	
Equity value			217,830	
Shares Normalized (2018E)			8,492	
Suggested value per share			25.7	
Current GE			30.5	
Difference			-16%	

Source: J.P. Morgan estimates, Bloomberg.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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Valuation

Despite having de-rated by ~1,000bps YTD, we continue to see valuation as expensive at current levels, trading at a ~10% premium to the group on PE and 100% on P/FCF on 2017 (~55% on a normalized basis). Given GE's difference in reporting style vs peers, a low quality EPS and FCF number, we dissect valuation using a number of metrics, which shows the stock trading at a ~20% weighted premium. Looking at SoTP, and factoring in all of the \$27B in underfunded pension as debt, we see ~20% downside at current levels, and even breaking out Digital and valuing this part of the business on EV/sales in line with software peers, we see only ~5% improvement vs the regular SoTP (~15% downside from current levels). Also, looking at leverage to an improving ISM scenario, GE has historically been a laggard given less cyclical torque from services as well as long cycle order dynamics. Finally, boiling all this down to a risk-reward scenario using our upside/downside analysis, we see ~10% downside overall vs down ~5% for the group.

Differences in Reporting Style

Before delving into valuation on key metrics vs peers, we quickly run through differences in GE's reporting style vs peers. Key items to consider when judging the quality of non-GAAP metrics are the 1) exclusion of non-operating pension from EPS, 2) inclusion of gains in EPS, 3) inclusion of dispositions in FCF, and 4) exclusion of Alstom FCF in the near-term.

Looking at the difference in reported EPS vs higher quality EPS numbers, we see a ~20% reduction which is ultimately visible in the actual FCF conversion, which we have discussed in length throughout the report.

Table 191: GE EPS reporting style vs Peers (2016E)

	2015	2016 Guidance	Peers who make similar adjustments
<i>Industrial EPS</i>	\$1.14	\$1.35	
<i>GE Capital EPS</i>	\$0.17	\$0.15	
2016EPS Non-GAAP Guide	\$1.31	\$1.50	
Non-operating pension	(\$0.18)	(\$0.14)	ROK is exactly similar, HON, PNR use MTM
Gains	\$0.11	\$0.20	HON
2016EPS High Quality	\$1.02	\$1.16	IR, EMR, MMM, TYC report all-in pension and exclude gains
<i>Industrial EPS</i>	\$0.85	\$1.01	
<i>GE Capital EPS</i>	\$0.17	\$0.15	

Source: Company reports and J.P. Morgan estimates.

Valuation Matrix: Trading at a Premium on All Metrics

GE's stock continues to screen expensive on various trading metrics and particularly on the key metrics like GAAP EPS, Pension adjusted EV/EBITDA and EV/FCF. On a weighted basis, GE currently trades at a 20% premium to the group, slightly better than DHR and close to MMM.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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Specifically, on P/FCF, we note that 2017 is not a normalized year for FCF for a few reasons: 1) Our 2017 estimates includes \$2.1B in pension contributions to the big GE Pension Plan (as per the 10-K filings) which we assume goes to a \$1B run rate from 2018 onwards, 2) we assume half of the cash related to 2016 restructuring actions flows through into 2017 given a lot of actions Europe (Alstom related), as well as other actions that are governed by non-US laws (per conversations with management). We believe our 2018 Industrial FCF conversion of ~80% is a more normalized run rate and applying this rate to our 2017 EPS estimate would imply a P/FCF premium of ~155% vs the 220% in the table below, a EV/FCF premium of ~130% vs the ~175% below, and a weighted average of ~10-15% vs the ~20% below, all still expensive vs the group.

Table 192: Valuation on Different Metrics

% premium/discount on 2017

Premium/Discount	Reported EPS Consensus Approach (2017)	GAAP EPS (including amortization, restructuring)	Cash EPS (normalized to exclude amortization on reported EPS)	Adjusted GAAP EPS with BS Upside (including amortization, restructuring, normalized for pension)	Reported Balance Sheet Adjusted P/E	Reported Pension Adjusted P/E	P/FCF	EV/EBITDA
DHR	107%	119%	114%	115%	105%	106%	107%	121%
DOV	106%	103%	95%	103%	106%	105%	88%	91%
EMR	97%	95%	95%	95%	100%	95%	99%	88%
GE*	111%	107%	108%	107%	106%	104%	223%	110%
HON	94%	91%	96%	96%	91%	102%	105%	96%
IR	86%	84%	83%	82%	87%	84%	85%	87%
MMM	118%	115%	122%	123%	122%	122%	122%	112%
PNR	83%	95%	88%	96%	88%	80%	87%	110%
ROK	116%	112%	119%	106%	110%	114%	105%	103%
ROP	145%	141%	130%	131%	137%	142%	121%	129%
TYC	104%	101%	103%	101%	104%	104%	114%	105%
UTX	88%	86%	86%	84%	87%	87%	87%	86%

Source: Bloomberg, Company reports, J.P. Morgan estimates. For GE we use Industrial EV for EV/EBITDA. For EV/FCF we use total EV

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 193: Valuation on Key Metrics Chosen For Weighted Average Calculation

% premium/discount on 2017

Premium/Discount	Adjusted GAAP EPS (including amortization, restructuring, normalized for pension)	Pension Adjusted EBITDA	EV/FCF (adjusted for Interest)	Weighted
DHR	118%	120%	109%	117%
DOV	102%	91%	88%	95%
EMR	92%	86%	101%	92%
GE*	106%	109%	175%	121%
HON	100%	104%	99%	101%
IR	82%	85%	85%	84%
MMM	119%	116%	119%	118%
PNR	91%	106%	97%	98%
ROK	111%	103%	88%	103%
ROP	138%	127%	114%	129%
TYC	101%	104%	106%	103%
UTX	85%	86%	107%	90%
Factor Model	40%	40%	20%	

Source: Bloomberg, Company reports, J.P. Morgan estimates. For GE we use Industrial EV and EBITDA for EV/EBITDA. For EV/FCF we use total EV

SoTP

Looking at valuation on a SoTP basis, using EV/EBITDA multiples at peers, GE currently trades at a ~20% premium.

Table 194: GE SoTP

	EBITDA 2017E	Suggested Multiple	Suggested value	Comments/Peers Used
GE Industrial				
Infrastructure ex-HC/O&G	13,969	10.5	146,025	DHR, DOV, EMR, Siemens, HUBB, ROK, UTX, ABB, Rolls-Royce, COL, Safran
Renewables	841	7.5	6,264	Vestas, Gamesa, Goldwind
Oil & Gas	1,601	14.6	23,340	FTI, HAL, SLB, DRQ
Healthcare	3,762	12.8	48,268	HOLX, VAR, ABT, BAX, BDX, BSX, JNJ, MDT
Lighting	177	14.7	2,599	CREE, AYI
GE Industrial	20,349	11.1	226,495	
GECS Tangible Book				
Industrial Net debt (2016 end)	14,000	1.1	15,660	
Underfunded pension			7,121	
			(27,000)	
Equity value			208,034	
Shares Normalized (2018E)			8,492	Normalized Share Count used given GE Capital Disposal Plan
Suggested value per share			24.5	
Current GE			30.5	
Difference			-20%	

Source: J.P. Morgan estimates, Bloomberg.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Given growing Digital revenues in the overall revenue mix, we also look at SoTP breaking this out and assigning a software EV/sales multiple. For the rest of the businesses, we use similar comps as above. Net-net, this results in a ~5% improvement in SoTP, and still implies a ~15% decline at current levels.

Table 195: GE SoTP Breaking out Digital

	EBITDA 2017E	Suggested Multiple	Suggested value	Comments/Peers Used
GE Industrial				
Infrastructure ex- HC/O&G/Renw/Lighting ex-Digital	12,481	10.5	130,475	DHR, DOV, EMR, Siemens, HUBB, ROK, UTX, ABB, Rolls-Royce, COL, Safran
Renewables ex-Digital	701	7.5	5,220	Vestas, Gamesa, Goldwind
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Lighting ex-Digital	177	14.7	2,599	CREE, AYI
Digital (EV/Sales)	7500	5.6	41,994	VEEV, MDSO, CHKP, AZPN, MANH, ANSS
GE Industrial	20,349	11.6	236,291	
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Net debt (2016 end)			7,121	
Underfunded pension			(27,000)	
Equity value			217,830	
Shares Normalized (2018E)			8,492	
Suggested value per share			25.7	
Current GE			30.5	
Difference			-16%	

Source: J.P. Morgan estimates, Bloomberg.

How GE Stacks up vs Group With Moves in ISM

Looking at the group versus the S&P 500, the best area to sell EE/MI has been when the ISM is above 55, and best odds for making relative money historically coincides with relatively weak ISM readings (sub 50). Within this the hit rate is actually below average when ISM is in the 45-50 range, but it's perfect when the index is below 45.

Table 196: Group Relative Performance and the ISM, 1/90-12/15

	Total	ISM>50	ISM<50	ISM			
				<45	45-50	50-55	>55
EE/MI vs S&P 500							
Avg 1-Yr Rel Perf	6.0%	5.1%	8.2%	12.7%	6.2%	7.3%	1.8%
Med 1-Yr Rel Perf	5.2%	4.0%	8.7%	11.2%	4.4%	6.5%	0.0%
Min 1-Yr Rel Perf	-19.8%	-19.8%	-11.0%	1.1%	-11.0%	-19.3%	-19.8%
Sample Size	312	217	95	28	67	132	85
Outperformances	216	144	72	28	44	102	42
% outperformances	69%	66%	76%	100%	66%	77%	49%

Source: Bloomberg, company reports, and J.P. Morgan estimates.

For GE specifically, versus the group, the historical data do not show any clear signal that investors have been much better off owning GE with the ISM below 50 than they were with the ISM above 50. What's interesting to point out here is that with the ISM <45 you have been better off owning others in the group.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 197: GE Relative Performance and the ISM, 1/90-12/15

	Total	ISM>50	ISM<50	ISM			
				<45	45-50	50-55	>55
GE vs EE/MI							
Avg 1-Yr Rel Perf	-3.9%	-2.1%	-8.0%	-16.9%	-4.3%	-3.1%	-0.6%
Med 1-Yr Rel Perf	-4.6%	-3.7%	-8.2%	-14.4%	-2.0%	-6.1%	-2.8%
Min 1-Yr Rel Perf	-46.5%	-42.8%	-46.5%	-46.5%	-39.7%	-42.8%	-17.7%
Sample Size	312	217	95	28	67	132	85
Outperformances	108	72	36	3	33	42	30
% outperformances	35%	33%	38%	11%	49%	32%	35%

Source: Bloomberg, company reports, and J.P. Morgan estimates.

Price Target – ~10% Downside at Current Levels

We don't think it's not fair that GE is being valued on 2018 estimates, on Alstom accretion dynamics and share buybacks, vs the rest of the group which is being valued on 2017, despite accretion dynamics at others like DHR (PLL) and HON (Elster) which get more favorable in 2018 as well. In any event, giving some credit here for the strategy to use GE Capital proceeds for buyback, we apply a 3% higher premium to our 2017 Industrial EPS estimates to arrive at our PT (this accounts for the lower share count in 2018, which is ~3% lower vs 2017).

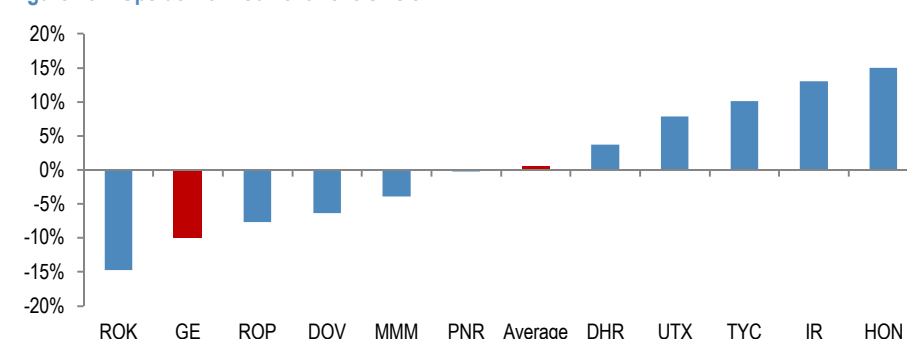
We introduce a year-end 2016 PT at \$27, based on a parity 2017 EPS (*taking into account \$0.03 of GECS preferred dividends*) which assumes a ~1x TBV on GE Capital (based on peer valuation multiples for GECAS), and a slight premium (as discussed above) to the group target multiple (~17x FY2) on our 2017 Industrial EPS of \$1.47. A group multiple may be generous, given weak FCF conversion, well below peers (~100%), an indication of lower earnings quality. Net-net our PT still assumes a ~20x 2018 FCF multiple which compares to ~16.5x for DHR/ROP on 2018 consensus estimates, and a still solid ~3.5% dividend yield.

Table 198: GE Price Target Derivation

	'17 EPS	Multiple	Per Share
Industrial EPS	1.47	17.5	25.8
	Tang BV/Sh	Multiple	Per Share
GECS Implied	1.61	1.0	1.6
Implied P/E (on 2017 earnings)		11.7	
Price Target			27
Current Price			30
Upside/Downside			-10%

Source: J.P. Morgan estimates

Figure 251: Upside from Current Levels vs JPM PT



Source: J.P. Morgan Estimates

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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Risk –Reward

Upside/Downside Analysis

We stress our valuation analysis and examine some of the catalysts that could drive the stock higher or lower. We build an upside case on potential acceleration of Industrial fundamentals and a downside case that assumes worse Industrial fundamentals, worse than 08/09, similar to what we laid out earlier in the “Safety Stock” debates section. Net-net, we arrive at a weighted risk-reward downside of ~10% vs the group average of down 5%.

Table 199: Risk – Reward vs Group

	JPM PT (Base Case)	Upside	Downside	Weighted
GE	-10%	11%	-42%	-11%
Group Average	1%	15%	-37%	-4%

Source: J.P. Morgan estimates.

Upside case: 15% earnings upside on Industrial fundamentals, productivity and capital deployment- We get to an upside case on a combination of better Industrial fundamentals, better execution on Alstom, and increased capital deployment. However, we see slightly below-average likelihood here, as this scenario requires a lot to go right in a complex portfolio that typically has many puts and takes. The two big levers are cap deployment and Alstom. On Alstom, we assume the company exceeds standing accretion targets driven by faster than expected realization of synergies and underlying margin improvement, while on deployment we assume the company executes on the talked about \$20B of capacity for buybacks and M&A.

On the industrial side we assume:

- 10% upside in GTs in ‘16/’17 driven by US cycle and ~10% upside in AGP upgrades
- Energy Connection, the most “under-earning” segment, improves margins from ~3.5% in 2015 to 7% in 2017.
- Oil & Gas margins beat expectations by ~50bps in 2016/2017.
- Aviation sees lower than expected mix impacts and LEAP ramp costs and margins beat by ~50bps in 2017.
- ALO beats base accretion assumptions adding ~0.02.
- On the portfolio side, GE has talked about potential to raise ~\$20B in debt and assuming full deployment of this + some of the available cash on balance sheet, we see this adding ~\$0.10 in EPS upside.
- We then value GE Industrial at a ~5% premium (giving benefit for lower normalized share count in 2018) on the upside case group target multiple of 17.9x, with the “new GECS” at ~1xTBV.

This gets to an upside value of ~\$34, or ~10% upside from current levels vs the group average of ~15%.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Table 200: GE Upside Case

EPS (\$)	2017E
Standing industrial EPS	1.47
GTs 10% upside driven by US cycle	0.01
AGP Upgrades Services Upside (15 units upside)	0.01
Wind 10% upside driven by International Pickup	0.02
Aviation Mix Impacts lower than expected (margins beat by ~50bps in '17)	0.02
Oil & Gas beat on Margin performance by 50bps in '16/17	0.01
Energy Connection to ~7% margins	0.01
ALO Accretion Beats High End of Range	0.02
M&A	0.10
Upside industrial EPS	1.66
Industrial value per share	32
Industrial EPS Normalized for 2018 Sharecount	1.70
P/E for Industrial	18.9
GECS value per GE share	1.61
TBV multiple	1.0
Implied P/E	11.7
Implied upside sum of parts value	34
Consolidated EPS	1.88
P/E on consolidated earnings	18.0
% stock upside	11%

Source: J.P. Morgan estimates.

Alternate Upside case: Similar to how we approached upside for others in the group, we look at upside from a more detailed bottom up end-market perspective rather than the purely GE specific scenarios above. The key end market upside levers are Oil & Gas onshore and offshore markets, commercial services, Power service, Transportation (driven by general industrial trends) and China Healthcare. Evaluating upside in these verticals gets us to net ~100bps of upside vs the standing organic rate of ~2.5%. Net-net our resultant Industrial EPS upside comes to \$1.63, slightly lower than the one discussed above.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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Figure 252: GE Upside Potential #2 – Net Organic Growth of +3.5% vs standing +2.5%

Possible Upside Growers	% Portfolio	Base Case	Upside Case	Difference	Total Growth Contribution
Oil & Gas Surface	1%	13%	25%	12%	0.3%
Aviation Commercial Services	10%	8%	13%	5%	1.2%
Healthcare China	2%	4%	8%	4%	0.1%
Energy Connection Power Conversion	2%	0%	10%	10%	0.2%
Renewables	8%	11%	15%	4%	1.2%
Total upside growth	22%		15%		3.0%

Growth Consistent with Base Case		Base Case	Base Case		
Power Services ex-AGP Upgrades	15%	5%	5%	0%	0.7%
Power Equipment ex-GTs	4%	0%	0%	0%	0.0%
Power Services AGP Upgrades	2%	8%	8%	0%	0.1%
Power Equipment GTs	6%	2%	2%	0%	0.1%
Energy Connection ex-Power Conversion	7%	2%	2%	0%	0.1%
Oil & Gas Drilling/Subsea	3%	-18%	-18%	0%	-0.5%
Oil & Gas Turbomachinery	4%	-16%	-16%	0%	-0.6%
Oil & Gas Downstream	2%	-5%	-5%	0%	-0.1%
Oil & Gas Digital	2%	-5%	-5%	0%	-0.1%
Aviation Military Services	2%	2%	2%	0%	0.0%
Aviation Equipment	12%	2%	2%	0%	0.2%
Transportation Loco Equipment	2%	-9%	-9%	0%	-0.2%
Transportation Loco Services	2%	2%	2%	0%	0.0%
Transportation Mining/Marine	1%	2%	2%	0%	0.0%
Appliance/Lighting	2%	3%	3%	0%	0.1%
Healthcare ex-China	14%	3%	3%	0%	0.4%
Subtotal rest of portfolio	78%		1%		0.5%

Upside scenario	3.5%
Current Organic	2.5%
Difference	104%
Incremental Margin	30%
EPS Upside Based on Organic Growth	2%
EPS Upside ALO (1%) + Cap Dep. (7%)	9%
Upside Industrial EPS (2017E)	\$1.63

Source: Company reports and J.P. Morgan estimates.

Downside case: GE Industrial positioned worse than prior downturn - The key differentiator during the last downturn was GE Industrial profits, which held up significantly better than peers, with nearly flattish results vs down ~20% at peers. This is solid on a headline basis and was driven by company specific and industry specific drivers at that point. Bulls seem to point to these headline metrics when judging GE in the event of another potential downturn. As highlighted in the “Safety Stock” debates section, we think GE stands to fare worse in a recession this time around with ~75% of the portfolio worse than the prior recession and the remaining likely to see similar declines. One could argue that some businesses have already started to decline (like Oil & Gas down ~12% in 2015, and expected to be down ~30% in 2016 and Transportation due to weak industrial activity and capex cuts at US rails), but the debate is more around the individual safety nature of these

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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portfolios in any given end market downturn, and we don't see any offsets this time around.

Table 201: Y/Y Profit Growth in 09/10

	% of portfolio (profits)	2009	2010	2016/2017 Recession?
Power & Water	30%	23%	4%	Significantly Less Growth
Oil & Gas	13%	-7%	-2%	Worse
Energy Connection	2%	-70%	8%	Similar
Aviation	30%	6%	-16%	Worse due to LEAP dynamics
Healthcare	16%	-15%	13%	Similar
Transportation	7%	-51%	-33%	Similar
Appliances & Lighting	4%	25%	12%	Down significantly
Sum	100%	-0.2%	-1.5%	Worse

Source: Company reports and J.P. Morgan estimates.

In a downside recession scenario we currently model ~25% declines in group profits and see GE falling in the same ballpark this cycle based on the moving parts discussed in the "Safety Stock" debates section.

Table 202: Y/Y Profit Growth in Near-term recession

	% of profits (2016E)	Profit Decline in Recession	Contribution
Power (inc. Alstom)	29%	-2%	0%
Renewables	4%	-25%	-1%
Oil & Gas	8%	-23%	-2%
Energy Connection	2%	-32%	-1%
Aviation	32%	-21%	-7%
Healthcare	17%	-15%	-3%
Transportation	6%	-67%	-4%
Appliances & Lighting	2%	-25%	-1%
Total			-18%
Group Average (JPMe)			-25%

Source: Company reports and J.P. Morgan estimates.

Looking at GE Capital, we believe the current vertical assets portfolio is undoubtedly less risk compared to the portfolio back in 08/09. Earnings at GECS fell ~93% from 07 levels by 09 and never recovered back to the 07 peak.

Table 203: GECS Portfolio

Revenue	2007	2008	2009	2010
Commercial Finance	6,039	2,949	(554)	(187)
Consumer Finance	4,269	3,664	1,663	2,629
Infrastructure	1,977	2,019	1,235	1,562
Corp/Elim	143	(858)	(1,450)	(858)
Total Net Income	12,428	7,774	894	3,146
Total Net Income Growth	21%	-37%	-89%	252%

Source: Company reports and J.P. Morgan estimates.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Looking specifically at the Vertical assets, earnings were down ~40% in 09, still sizeable in the context of the overall GE portfolio that is now ~90% industrial in terms of profits. In the event of a downturn, we see this portfolio having similar risk this time around and declines here could have a significant impact on overall earnings. Every 10% decline here impacts the overall GE EPS by ~1%.

Table 204: GECS Portfolio

Revenue	2007	2008	2009	2010
GECAS	1,211	1,194	1,023	1,195
Energy Financial Services	766	825	212	367
Infrastructure	1,977	2,019	1,235	1,562
Growth Y/Y	6%	2%	-39%	26%
Overall GE Industrial Growth	14%	7%	0%	-2%

Source: Company reports and J.P. Morgan estimates.

Net- net factoring the above profit scenarios, we see potential for ~\$1.10 in Industrial EPS in the event of a 2017 recession with a stock price of ~\$18, down ~40-45% from current levels compared to the group downside of ~35%.

Table 205: GE EPS Downside Case vs Current 2017 Model

EPS (\$)	2017E
Standing industrial EPS	1.47
Power	(0.06)
Renewables	(0.03)
Oil & Gas	(0.00)
Energy Connection	(0.03)
Aviation	(0.13)
Healthcare	(0.06)
Transportation	(0.07)
Lighting	0.01
Ending EPS	1.10
Industrial value per share	16
Industrial EPS w/ additional buybacks	1.10
P/E for Industrial	14.9
GECS Value	1.19
TBV multiple	0.8
Implied P/E	11.7
Implied upside sum of parts value	18
Consolidated EPS	1.21
P/E on consolidated earnings	14.6
% stock upside	-42%

Source: J.P. Morgan estimates.

Sentiment

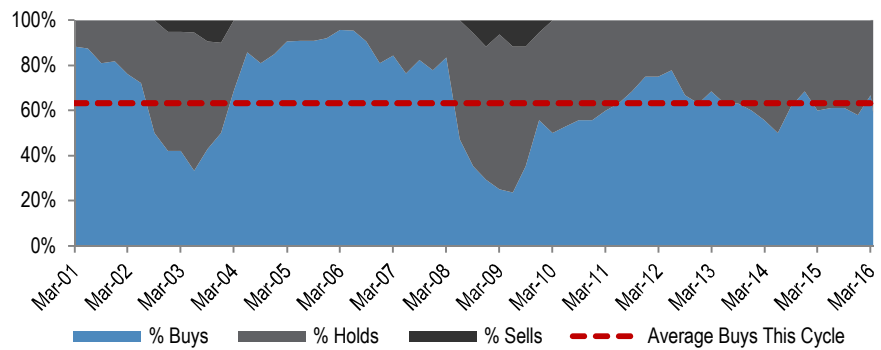
While the stock has de-rated YTD, sell-side sentiment has stayed largely unchanged over the past couple years, with ~60% 'Buys' and ~40% 'Holds' as per Bloomberg. The last sell rating on the stock was back in 2010.

C. Stephen Tusa, Jr CFA
 (1-212) 622-6623
 stephen.tusa@jpmorgan.com

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Figure 253: Sell-Side Sentiment Roughly Unchanged over the last few years



Source: Bloomberg.

Gross Margin - Solid execution on Cost Productivity, Increasing Services/Software Mix and Brilliant Factory Initiatives Offset By OE Mix; But Performance not differentiated

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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Investment Thesis, Valuation and Risks

General Electric Co. (*Underweight; Price Target: \$27.00*)

Investment Thesis

GE has transformed significantly, with dramatic portfolio change on the GECS side, the largest deal in its history with Alstom, various financial frameworks, an activist, IOT emphasis, and the first year of stock outperformance in 2015 since 1999. By and large, while EPS dilutive, the moves have been positive when considering future positioning, and there certainly seems to be something "different" here. However, by the numbers, what we have seen is core operating performance that is below plan, and, at current, consensus expectations curve that remains too high, FCF that is weakest in the sector, and, with that backdrop, expensive valuation, with limited incremental catalysts to change the narrative. We stick to what the numbers say, which underpins our UW rating.

Valuation

Assuming coverage at Underweight; initiate Dec 2016 PT of \$27. On our 2017 EPS estimate, GE shares now trade at ~18.5x, a ~10% premium to peers. Our \$27 Dec 2016 price target is based on a sum-of-the-parts calculation using a ~1x tangible book value for GECS. For GE Industrial, we assume a 17.5x multiple on 2017E Industrial EPS, a slight premium to the group target of 17x (driven by a lower 2018 normalized sharecount). This results in a ~17x blended P/E multiple, in-line with the group target multiple and a ~20x P/FCF on 2018 estimates.

Risks to Rating and Price Target

Upside risks include 1) significant improvement in FCF generation, 2) stronger than expected uptick in Digital revenues, which also helps profitability, 3) fundamentals in Oil & Gas don't worsen as expected, 4) execution on product transition in Aviation is better than expected.

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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General Electric Co.: Summary of Financials

Income Statement - Annual					Income Statement - Quarterly				
	FY15A	FY16E	FY17E	FY18E		1Q16A	2Q16E	3Q16E	4Q16E
Revenues	117,386	124,193	122,758	126,708	Revenues	27,845A	31,304	-	-
Total operating expenses	(97,754)	(104,573)	-	-	Total operating expenses	-	-	-	-
Other expenses	(5,108)	(3,450)	(3,850)	(3,750)	Other expenses	(1,571)A	715	-	-
EBIT	14,524	16,170	17,149	18,820	EBIT	2,238A	5,111	-	-
Net interest income / (expense)	(1,706)	(1,760)	(1,760)	(1,760)	Net interest income / (expense)	(440)A	(440)	-	-
Pretax income	12,818	14,410	15,389	17,060	Pretax income	1,798A	4,671	-	-
Income taxes	(1,507)	(2,154)	(2,369)	(2,688)	Income taxes	(201)A	(723)	-	-
Net income	13,108	13,589	14,320	15,672	Net income	1,930A	4,280	-	-
Diluted shares outstanding	10,016	9,157	8,704	8,492	Diluted shares outstanding	9,372A	9,219	-	-
EPS	1.31	1.48	1.65	1.85	EPS	0.21A	0.46	-	-
Other items:					Other items:				
EBITDA	19,761	20,722	21,652	23,323	EBITDA	2,864A	5,736	-	-
EBITDA/share	1.97	2.26	-	-	EBITDA/share	-	-	-	-
Balance Sheet and Cash Flow Data					Ratio Analysis				
	FY15A	FY16E	FY17E	FY18E		FY15A	FY16E	FY17E	FY18E
Cash and cash equivalents	10,372	12,268	9,213	10,614	Sales growth (total)	(21.0%)	5.8%	(1.2%)	3.2%
Short term investments	151	97	97	97	Of which:				
Accounts receivable	14,707	14,048	13,969	14,459	Organic	2.2%	1.7%	2.5%	3.4%
Inventories	22,449	21,806	21,684	22,444	Acquisitions/divestures	1.3%	7.0%	(3.0%)	0.0%
Other current assets	0	0	0	0	fx translation	(4.4%)	(1.4%)	0.0%	0.0%
Current assets	47,679	48,219	44,964	47,614	EBITDA growth	(14.8%)	4.9%	4.5%	7.7%
PP&E	20,145	17,229	18,026	18,524	EBIT growth	(20.8%)	(0.1%)	7.0%	7.5%
Total assets	323,563	293,263	284,035	286,208	EPS growth	(20.8%)	13.4%	10.9%	12.2%
Total debt	103,569	93,012	93,012	93,012	EBITDA margin	16.8%	16.7%	17.6%	18.4%
Total liabilities	223,911	207,239	206,052	206,217	EBIT margin	12.4%	13.0%	14.0%	14.9%
Shareholders' equity	98,274	81,763	73,722	75,729	Tax rate	11.8%	14.9%	15.4%	15.8%
Net income (including charges)	11,311	12,257	13,020	14,372	Return on capital employed (ROCE)	7.4%	7.3%	8.5%	9.5%
D&A	2,473	2,502	0	0	Net debt / total capital	48.3%	48.4%	51.8%	50.7%
Change in working capital	(350)	122	13	(84)	Net debt / EBITDA	4.7	3.9	3.9	3.5
Other	(9,659)	(1,388)	2,502	2,502	Interest coverage	11.6	11.8	12.3	13.3
Cash flow from operations	16,342	30,807	22,306	17,766	Book value per share	9.81	8.93	-	-
Capex	(3,785)	(4,350)	(4,100)	(3,800)	FCF / share	1.40	3.05	2.26	1.82
Acquisitions	(10,350)	(250)	0	0	FCF / net income	107.3%	205.7%	137.5%	98.6%
Divestures	1,725	3,539	0	0	FCF / sales	12.0%	22.5%	16.0%	12.2%
Other investing	(357)	(293)	(200)	(200)	P / E	26.9	22.7	20.3	17.9
Cash flow from investing activities	(12,767)	(1,354)	(4,300)	(4,000)	EV / EBITDA	18.9	17.6	17.0	15.7
Dividends	(9,289)	(8,481)	(8,061)	(7,865)	EV / sales	3.2	2.9	3.0	2.9
Share repurchases	(1,099)	(20,000)	(13,000)	(4,500)					
Other financing	204	(182)	0	0					
Cash flow from financing activities	(8,211)	(27,449)	(21,061)	(12,365)					
Free cash flow	14,062	27,954	19,695	15,449					

Source: Company reports and J.P. Morgan estimates.

Note: \$ in millions (except per-share data). Fiscal year ends Dec

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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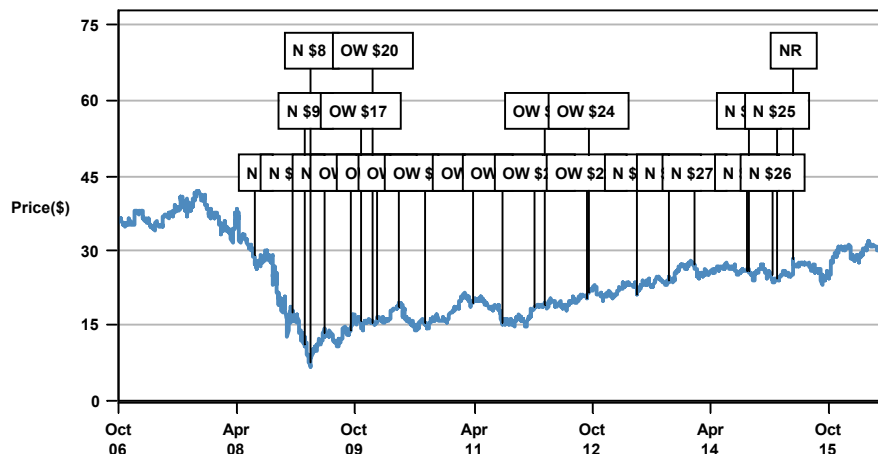
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General Electric Co. (GE, GE US) Price Chart



Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
Break in coverage Jun 16, 2008 - Dec 09, 2008.

Date	Rating	Share Price (\$)	Price Target (\$)
16-Jun-08	N	29.15	--
09-Dec-08	N	17.78	13.00
06-Feb-09	N	11.10	9.00
10-Mar-09	N	7.41	8.00
12-May-09	N	13.68	12.00
08-Sep-09	OW	13.87	17.00
19-Oct-09	OW	15.84	17.00
16-Dec-09	OW	15.69	20.00
07-Jan-10	OW	16.25	22.00
19-Apr-10	OW	18.97	23.00
17-Aug-10	OW	15.58	21.00
23-Mar-11	OW	19.53	22.00
12-Aug-11	OW	15.68	19.00
06-Jan-12	OW	18.65	20.00
17-Feb-12	OW	19.28	21.00
05-Sep-12	OW	20.51	22.00
10-Sep-12	OW	21.59	24.00
22-Apr-13	N	21.35	22.00

C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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11-Sep-13	N	24.09	26.00
16-Jan-14	N	27.34	27.00
11-Sep-14	N	26.02	28.00
24-Sep-14	N	25.93	27.00
05-Jan-15	N	25.06	26.00
26-Jan-15	N	24.59	25.00
10-Apr-15	NR	28.51	--

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C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

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C. Stephen Tusa, Jr CFA
(1-212) 622-6623
stephen.tusa@jpmorgan.com

North America Equity Research
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